REP logo; FEMA Radiological Emergency Preparedness

Radiological Emergency Preparedness Program

On December 7, 1979, following the March 1979 Three Mile Island nuclear power plant accident in Pennsylvania, President Carter transferred the Federal lead role in offsite radiological emergency planning and preparedness activities from the U.S. Nuclear Regulatory Commission (NRC) to FEMA . FEMA established the Radiological Emergency Preparedness (REP) Program to (1) ensure that the public health and safety of citizens living around commercial nuclear power plants would be adequately protected in the event of a nuclear power station accident and (2) inform and educate the public about radiological emergency preparedness. FEMA's REP Program responsibilities encompass only "offsite" activities, that is State and local government emergency preparedness activities that take place beyond the nuclear power plant boundaries. Onsite activities continue to be the responsibility of the NRC.

Organization

- Chart
- REP Mission and Responsibilities
- Federal Radiological Preparedness Coordinating Committee (FRPCC)
- Conference of Radiation Control Program Directors (CRCPD)
- Regional Assistance Committee Chairs Advisory Committee (RACCAC)
- Initiatives

Program Review - What's New

- Consideration of Potassium (KI) in Emergency Plans New

REP PROGRAM STRATEGIC REVIEW
IMPLEMENTATION PRODUCTS

- Federal Register Notices, June 11, 2001
- SRSC's Initiatives Implementation Matrix, May 9, 2001
- Evaluation Areas for Interim Use
- Draft Evaluation Modules for Interim Use, October 27, 2000
- Final FEMA Policy
- Final FEMA Documents
    - Initiative 1.12, Staff Assistance Visits, Word document (113 Kb)
    - Initiative 1.7, New Scenario Options (preface & policy paper
        - Preface, Word document (19 Kb)
        - Policy Paper, Word document (27 Kb)
    - Initiative 1.8-1.10 "Annual Letter of Certification", Word document (27 Kb)
    - Initiative 4.0-4.4, Recommendations for Tribal Integration into the REP Program, Word document (62 Kb)
- Draft Documents Posted for Comments
    - Addenda To NUREG-0654/FEMA-REP-1, Rev 1, October 19, 2000
    - Recommended Initiative 5.1, Establish Qualification Standards, August 18, 2000
    - Recommended Initiative 1.6, Expand the Use of Exercise Credit, August 18, 2000
    - Recommended Initiative 3, Use State, Tribal, and Local Personnel as Evaluators, June 15, 2000
    - Recommended Initiative 1.11 negotiate Six-Year Agreements, June 1,2000
    - Recommended Initiative 1.1 Establish Evaluation Areas:Second Round March 2000
    - Recommended Initiative 1.7 Implement New Scenario Options
    - Recommended Initiative 4.0 Include Native American Tribal Nations in the REP Preparedness Process
    - Recommended Initiative 1.12, Staff Assistance Visits

- Comments on the REP Strategic Review Steering Committee (SRSC) Final Recommended Initiatives and SRSC response to comments, Word Document, 337 Kb
- REP Program Comments on the Strategic Review Strawman Document
- RD's Memo RE: Third OSWG Meeting, December 23, 1999

Program Documents

Policy and Guidance
Regulatory Basis
Planning Basis
User Fees
Emergency Alert System (EAS)
FDA-PAGs
Federal Register Notices
Publications

Field Site Activities

2001 National REP Conference Information
Nuclear Power Plants
Events
Training
Federal Radiological Emergency Response Plan
REP Schedules and Reports

Viewer Feedback/Comment Form for CARPD "Public Comments"

Updated: August 8, 2001

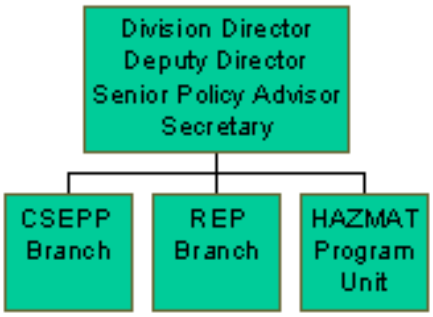
Organization

The Preparedness, Training and Exercises Directorate (PT&E)

REP functions are contained in the Radiological Emergency Preparedness Branch of the Chemical & Radiological Preparedness Division and FEMA RegionsI-VII, IX, and X.

Directorate Reorganization

Chemical and Radiological Preparedness Division



REP Mission and Responsibilities

Mission

- To enhance planning, preparedness, and response for all types of peacetime radiological emergencies with Federal, State, and local governments and the private sector and

- To ensure that adequate offsite emergency plans and preparedness are in place and can be implemented by State and local governments to protect the health and safety of the public living in the vicinity of commercial nuclear power plants through the evaluation of scheduled biennial exercises.

Responsibilities

- Review and evaluate offsite radiological emergency response plans (RERP) developed by State and local governments;

- Evaluate exercises conducted by State and local governments to determine whether such plans can be implemented;

- Make findings and determinations on the adequacy of offsite emergency planning and preparedness and submit them to the U.S. Nuclear Regulatory Commission in connection with the licensing of commercial nuclear power plants;

- Respond to requests by the NRC pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993;

- Coordinate the activities of Federal agencies with responsibilities in the radiological emergecy planning process:

  U.S. Department of Commerce
  U.S. Department of Defense
  U.S. Environmental Protection Agency
  U.S. Department of Energy
  U.S. Department of Health and Human Services
    U.S. Food and Drug Administration
    Center for Disease Control
  U.S. Department of Transportation
  U.S. Department of Agriculture
  U.S. Department of the Interior
  U.S. Nuclear Regulatory Commission
  U.S. Department of Veterns Affairs
  U.S. Department of State
  U.S. Department of Housing and Urban Development
  U.S. Department of Justice
  General Services Administration, and
  National Aeronautic and Space Administration;

- Chair the Federal Radiological Preparedness Coordinating Committee (FRPCC) and Regional Assistance Committee (RAC); and

- Provide regulatory oversight, rule-making and guidance as necessary.

FEMA Radiological Emergency Preparedness Banner

Activity Links

- Conference of Radiation Control Program Directors (CRCPD)
- Regional Assistance Committee Chairs Advisory Committee

Federal Radiological Preparedness Coordinating Committee (FRPCC)

- January 17, 2001 FRPCC Meeting Notes
- September 20, 2000 FRPCC Meeting Notes
- May 18, 2000 FRPCC Meeting Notes

In 1982, the FRPCC was established under 44 CFR 351 in order to coordinate all Federal responsibilities for assisting State and local governments in emergency planning and preparedness for peacetime nuclear emergencies and to enhance Federal response planning. There are now 15 Federal agencies with membership on the FRPCC; FEMA is the chair.

The FRPCC performs the following functions:

- Assists the Director of FEMA in providing policy direction with respect to Federal assistance to State and local governments in their radiological emergency planning and preparedness activities.

- Establishes subcommittees to aid in carrying out its functions. Current subcommittees include Training, Offsite Instrumentation,

Transportation, and Federal Response.

- Assists FEMA in resolving issues relating to the granting of final approval, under 44 CFR 350, of a State radiological emergency preparedness plan.

- Coordinates research and study efforts of its member agencies relative to State and local government radiological emergency preparedness to ensure minimum duplication and maximum benefits to State and local governments.

Updated: July 11, 2001

Activity Links

Federal Radiological Preparedness Coordinating Committee

Regional Assistance Committee Chairs Advisory Committee

Conference of Radiation Control Program Directors (CRCPD)

The Conference of Radiation Control Program Directors, Inc. (CRCPD) is a nonprofit organization made up of individuals in State and local government who regulate and control the use of radiation sources, and of individuals, regardless of employer affiliation, who have expressed an interest in radiation protection. The CRCPD was formed in 1968.

The objective of the CRCPD are to promote radiological health in all aspects and phases; to encourage and promote cooperative enforcement programs with Federal agencies and between related enforcement agencies within each State; to encourage the interchange of experience among radiation control programs; to collect and make accessible to the membership of the CRCPD such information and data as might be of assistance to them in the proper fulfillment of their duties; to promote and foster uniformity of radiation control laws and regulation; to encourage and support programs which will contribute to radiation control for all; to assist the membership in their technical work and development; and to exercise leadership with radiation control professionals and consumers in radiation control development and action.

Activity Links

Federal Radiological Preparedness Coordinating Committee

Conference of Radiation Control Program Directors (CRCPD)

Regional Assistance Committee Chairs Advisory Committee (RACCAC)

The Regional Assistance Committee (RAC) Chairs Advisory Council, or RAC AC, was established to provide a vehicle for sharing REP and non-REP Program related information among RAC Chairpersons and to provide recommendations to the Preparedness, Training, and Exercises Directorate (PT&E) for developing and modifying program policy and guidance. As a corollary responsibility, the RAC AC provides technical expertise to the Federal Radiological Preparedness Coordinating Committee (FRPCC), as needed. The RAC AC membership consists of the nine RAC Chairs, the Chairperson of the FRPCC, and the Headquarters REP Branch Chief. The RAC AC elects a Chairperson and Vice-chairperson to serve one-year terms. The 2001 RAC AC Chairperson is Eric A. Jenkins, Region VII RAC Chair, and the Vice-Chairperson is Daniel McElhinney, Region I RAC Chair. The RAC AC meets quarterly to address issues and conflicts identified by FEMA and other interested parties and identify inconsistencies in the development, interpretation, and implementation of REP policy and guidance.

Updated: July 24, 2001

FEMA Radiological Emergency Preparedness Banner

January 17, 2001, FRPCC Meeting Notes

On January 17, 2001, the Federal Emergency Management Agency (FEMA) hosted a Federal Radiological Preparedness Coordinating Committee (FRPCC) meeting in Conference Room 273 at FEMA Headquarters.

Russell Salter, Director of FEMA's Chemical and Radiological Preparedness Division and Chair of the FRPCC, opened the meeting at 10:00 a.m. by welcoming the members from other Federal agencies.

After introductions around the table, Mr. Salter requested Vanessa Quinn to provide a status report on the implementation of the REP Strategic Review Initiatives.

REP PROGRAM STRATEGIC REVIEW IMPLEMENTATION UPDATE

Presentation by Vanessa E. Quinn, FEMA:

- Initiatives Completed
    1. 1.2-1.5 Policy Papers
    2. 1.7 Scenario Options
    3. 1.8-1.10 Annual Letter of Certification
    4. 1.12 Staff Assistance
    5. 2.1-2.7 Federal Participation in REP Exercises
    6. 4.1-4.4 Include Tribal Nations in the REP Process
    7. 5.2 Increase Training Opportunities
- Pilot Program of Evaluation Areas
    - Concept and Participants

    - Critique of Pilots and Consideration of Results
- Implementation of Remaining Initiatives
    - Evaluation Areas
    - Expand the Use of Credit
    - Six-year Agreements
    - REP One Book
    - NUREG-0654 Addenda
    - Use of State, Tribal, and Local Personnel as Evaluators
    - REP Training

Remaining Initiatives will be posted to the REP Website and Hotline.

COORDINATION OF FEDERAL PLAY IN POST-PLUME EXERCISES UPDATE

Presentation by Nancy H. Goldstein, FEMA:

- Process for Fulfilling Requests for Federal Play during Post-Plume REP Exercises
    - Exercises Scheduled for Federal Play
    - Provisions for Appropriate Players
        - Mission Statement
        - FEMA Director's letter to Agencies Department Heads
    - Supportive Scenarios for Federal Players
    - Future Post-Plume Exercises

The attendees were given copies of the FRPCC-approved letter from the FEMA Director to the heads of the FRERP signatory agencies.

Mr. Salter asked members to provide the name and address to whom the Director's letter should be sent.

Discussion

- DOE's Aerial Measuring System (AMS) program budget has been cut and will impact REP planning around the country.

- Gary Goldberg responded that DOE has implemented new cost cutting measures and that the AMS program was one of the items. He indicated that he would request someone at the AMS program office to come to the FRPCC offsite meeting if that was agreeable. All the members agreed and Mr. Salter said that the members would look forward to a DOE presentation.

Actions:

- DOE presentation on the AMS program.
- RAC AC official position letter on KI to be provided at the next meeting.
- FEMA to send letters from the new FEMA Director to heads of FRERP signatory agencies urging them to budget for and carry out exercise play in REP post-plume exercises.
- FEMA to send out reminder for members to send in the name and address of the individual who should receive the letter.

Mr. Salter informed the members that during the Regional Assistance Committee Chairs Advisory Council (RAC AC) meeting in San Francisco, the RAC AC members elected Mr. Eric Jenkins as the new RAC AC Chair for 2001 and Daniel McElhinney as the new Vice-Chair. Mr. Salter thanked Mr. McElhinney for his contribution as the outgoing Chair. Mr. Salter asked Mr. McElhinney to give a report on the San Francisco conference.

REPORT ON REGIONAL ASSISTANCE COMMITTEE CHAIRS ADVISORY COUNCIL (RAC AC) ACTIVITIES

Presentation by Mr. McElhinney, FEMA RAC AC, Vice-Chair:

Regional Critiques of the New Evaluation Areas Pilot Program

- 4 Pilot Exercises
- Lessons Learned
  -
  - Additional training needed for evaluators regarding transition from objective to subjective evaluation methodology.
  - On-location post-exercise critique with participants immediately following the exercise is more critical using the new methodology. Additional training and guidance are needed.
  - More detailed and complete narrative summaries are required. These summaries need to be able to stand alone; answer the who, what, when, where, how, and the potential impact; and cite specific requirements of the plan of record or policy and guidance.
  - Participants felt that the new approach was more realistic and required less gamesmanship.
  - More guidance on how to implement immediate corrective action, for example, who approves it, and what are the limitations and exceptions.

- Regarding KI for the general public, the RAC AC has forwarded its official position to FEMA. The RAC AC believes that for FEMA to administer funds for the purchase of Potassium Iodide (KI) for the general public would be inconsistent with FEMA's mandate. It should be stressed to any community considering purchasing KI for distribution to the general public that funding is only available for the purchase of the pills. The funding does not include planning, storage, distribution, demonstrating/exercising the capability, or the disposal costs. The provisions of NUREG-0654/FEMA-REP-1 and FEMA-REP-14/15 would apply in these cases.
- Some Emergency Alert System (EAS) stations are not staffed at night and run in an automatic mode. The RAC AC is concerned and is now monitoring EAS 24-hour coverage at radio stations. Agreements with radio stations are critical to ensure ready access any unattended times.
- The RAC AC is considering post plume phase exercise scheduling approaches on a national level. One proposal suggested by NRC Region IV is very similar to NRC's Region I/ FEMA's Regions I, II, and III Annual Scheduling Conference format.
- The RAC AC will forward a proposal to augment Regional Operations Center (ROC) and Emergency Response Teams (ERT) organizations with a Technical Hazards Liaison/Adviser.
- During the meeting in San Francisco, the RAC AC developed two issues for the transition team: 1. Need to plan for potential requests to commission Nuclear Power Reactors and 2. Re-examination of Presidents Carter's moratorium on recycling nuclear spent fuel.

Mr. Salter thanked Mr. McElhinney and asked Dr. Charles Miller, NRC, to discuss the KI rulemaking decision and draft policy.

- Dr. Miller handled out a package that contained: (1) the final rulemaking decision (effective April 18, 2001) to require consideration of KI as a supplemental measure when looking at a range of protective actions and (2) a copy of the draft proposed Federal policy.
- Two activities are taking place:
  - The KI policy has to be brought into accord with the EPA PAGs.
  - The FDA has a draft document out for comment that revises the recommended dosages of KI.

  Dr. Miller would like the FRPCC members to comment on the draft proposed Federal policy.

  Mr. Salter opened the floor for discussion and comments.

Discussion:

- Mr. Salter asked if the funds expire at the end of the fiscal year or are they carried to the following year. Dr. Miller responded that the Commission sets the priority for program funding and determines if KI is a set-aside. Elaine Chan offered an option to use the initial funding and carry the KI supply over to the following fiscal year.
- Glenn Tracy said that there are FEMA/NRC issues, raised by the RAC AC, to be worked out via a FEMA/NRC Steering Committee for the implementation of KI. Vanessa E. Quinn and Kathy Halvey Gibson will be on this Committee. The FRPCC will establish the Federal policy, and the Steering Committee will work on how to carry it out.
- Russ Salter asked if the approved FDA dosage document could be several months away. Upon receiving a positive response, Mr. Salter expressed a concern that the States have to consider KI prior to April and they will not have guidance on what to consider.
- Mr. Conklin suggested that the guidance say "The next time that you do your annual plan review, consider...." Mr. Salter suggested "The next time, from April 2001 on, that you do your annual plan review, consider...."
- Dr. Miller pointed out that the NRC thinks that the FDA guidance should be issued prior to conducting a review of the EPA/PAG guidance.
- Mr. Salter recommended that the FRPCC members' e-mail their comments on the NRC's draft proposed Federal policy to Pat Tenorio by February 16, 2001. FEMA would then package the comments. Dr. Miller asked that the FRPCC's comments be transmitted from Mr. Salter to Frank Congel, at NRC.

Mr. Salter said that this issue is an important factor and we should have an in-depth discussion of it during the offsite meeting. The members, agreed.

Actions:

- Comments on the "Revised Federal Policy on Use of Potassium Iodide for Thyroid Protection in Radiological Emergencies at Commercial Nuclear Power Plants" is to be e-mailed to Pat Tenorio by February 16, 2001.
- Start up the FEMA/NRC Implementation Steering Committee immediately and begin its work.

- Monitor what is happening with the FDA's guidance on dosage.

Mr. Salter asked for the Subcommittee reports.

FEDERAL RESPONSE SUBCOMMITTEE:

Presentation by Dr. Miller, NRC, Co-chair:

Dr. Miller presented two documents, the:

- Draft Proposed Update on the Federal Response Subcommittee Charter/Mission Statement.
- New Task Charter/Mission Statement and Schedule on the Implementation and Resolution of the "One Voice" Initiative.

Dr. Miller advised that he had incorporated previous comments from FRPCC members and reiterated the purpose of the One Voice Initiative. He asked the members to provide comments by February 16, 2001.

Discussion:

- Mr. Salter asked if it was agreeable to the members to have comments submitted by February 16, 2001, to Dr. Miller.

Actions:

- FRPCC members are to provide comments to Dr. Miller by COB February 16, 2001. The members will be asked to endorse the Charter during the March retreat. Dr. Miller wanted to know the Agencies interested in participating on the Subcommittee.
- By the end of the fiscal year, the Subcommittee will have its recommendations to the full committee. The Subcommittee will continue as a forum.

RADIOLOGICAL INCIDENT ANNEX

Presentation by Ms. Goldstein for Karen Sagett, FEMA:

- A draft of proposed changes to the Federal Response Plan, Section IV.B., Pages 11-12, "Concurrent Implementation of Other Federal

Emergency Plans," was distributed and e-mailed to FRP Primary and Support Agencies for their comments. Comments are due by January 22, 2001.

EXERCISES SUBCOMMITTEE

Presentation by Vanessa Quinn, FEMA, Co-chair:

- The Subcommittee cancelled its meeting scheduled on January 18 because of a conflict with the events at the Mall.
- The Exercises Subcommittee Charter is final and became effective October 10, 2000.
- Subcommittee ongoing items include the National Exercise Schedule and future exercises; comments to the Radiological Incident Annex; and Federal participation in REP exercises.
- The Subcommittee planned to discuss the Palo Verde Exercise; Federal Participation; Agencies' out-briefs and DOD exercise data program.

No comments.

TRANSPORTATION ACCIDENTS SUBCOMMITTEE:

Report by Ernesto Calderon for William McNutt, FEMA, Co-chair:

- FEMA-REP-5 is in printing. No other items reported.

No comments.

TRAINING SUBCOMMITTEE

Presentation John Peabody, FEMA, Chair:

- The Training Subcommittee presented a training matrix document to help individuals make decisions regarding the course, module, or activity that would best meet their training needs.
- Mr. Peabody also presented a request for the FRPCC to review the Decontamination Procedures for responders. There are three methods: the Dry Decontamination, Modified Wet Decontamination, and the Standard.

Discussion:

- Mr. Conklin said that he would handle the issues as presented. Mr. Salter said that he needed more information before assigning the task to a subcommittee.
- Mr. Peabody said he would provide the information to the FRPCC at the next meeting.

PROTECTIVE ACTION GUIDES (PAG) SUBCOMMITTEE

Presentation by Mr. Conklin, EPA, Chair:

- The PAG Subcommittee met and Subcommittee members are reviewing the revised Protective Action Manual for 30-day comment period. The Protective Action Manual will not be issued in final until the FDA KI guidance is completed.

No comments.

ENVIRONMENT, FOOD, AND HEALTH SUBCOMMITTEE

Report by Lori Thomas for Bob Conley, USDA, Chair:

- The draft revised Subcommittee Charter includes the Advisory Team's comments and will need to be rewritten based on these comments.

OFFSITE INSTRUMENTATION SUBCOMMITTEE

Presentation by Patricia Milligan, NRC, Co-chair:

- The Instrumentation Subcommittee has completed its primary work on drafting a guidance document and background document containing a national standard for portable radiological monitoring instruments that has protection comparable to the standard for portal monitors.
- Since the last FRPCC meeting, the draft documents have been forwarded to Ron Fraass, Chair of the E-6 Committee of the Conference of Radiation Control Program Directors (CRCPD). Copies of both documents were forwarded by Mr. Fraass to the CRCPD points of contact in all 50 States for review and comment.
- The Subcommittee is developing further draft revisions of both

guidance documents to reflect the States' input. Once this effort is completed, the Subcommittee will develop a final set of guidance documents for distribution and use by Federal and State officials associated with the REP Program.

OFFSITE FRPCC RETREAT

Presentation by Mr. Salter:

- Mr. Salter suggested an offsite FRPCC retreat in order to review documents presented to the FRPCC for approval. It would be offsite for two days with an agenda.
- The members agreed to the two-day meeting during the week of March 5th.

Discussion:

- Mr. Conklin suggested using a facilitator to free-up Mr. Salter. The facilitator would take notes, etc., and also pre-survey the members and help to set an agenda. Mr. Conklin recommended a facilitator that FEMA also uses.
- Mr. Salter agreed to find a site for the two-day meeting and to use a facilitator.

MEETING SUMMARY

Mr. Salter summarized the meeting results as follows:

- FEMA to send a letter from the Director, when confirmed, to heads of FRERP signatory agencies urging them to budget for and carry out exercise play in REP post-plume exercises.
- DOE to give a presentation on the AMS program.
- RAC AC official position letter on KI to be provided at the next meeting.
- NRC to provide an electronic "clean-copy" of the Revised Federal Policy on Use of Potassium Iodide for Thyroid Protection in Radiological Emergencies at Commercial Nuclear Power Plants. FRPCC members to provide comments by February 16, 2001 by e-mail to FEMA.
- Draft Proposed Federal Response Subcommittee Mission/Charter for

the One Voice Initiative for comments by February 16, 2001, to Dr. Miller, Co-chair of the Subcommittee for this initiative.

- Comments on the proposed changes to the Federal Response Plan due by January 22, 2001, to Karen Sagett.

Mr. Salter said that he would schedule the FRPCC offsite meeting for the week of March 5th and notify the members as soon as possible.

The meeting was adjourned.

ACTION LIST
FRPCC MEETING
January 17, 2001

1. FEMA to email to the FRPCC members "clean copy" of the Federal Policy on Potassium Iodide. (Completed)

2. FRPCC members to comment on the Federal Response Subcommittee Charter and mission statement implementing the "One Voice" initiative. Comments were to be e-mailed to Dr. Miller, NRC. (Distributed for a second review)

3. FEMA to send a letter from the new FEMA Director to the heads of FRERP signatory agencies urging them to budget for and carry out exercise play in REP post-plume exercises.

4. DOE to give a presentation on the AMS program.

Updated: July 11, 2000

FEMA Radiological Emergency Preparedness Banner

September 20, 2000 FRPCC Meeting Notes

On September 20, 2000, the Federal Emergency Management Agency (FEMA) hosted a Federal Radiological Preparedness Coordinating Committee (FRPCC) meeting in the Lobby Conference Room at FEMA Headquarters.

Russell Salter, Director of FEMA's Chemical and Radiological Preparedness Division and Chair of the FRPCC, opened the meeting at 10:00 a.m. by welcoming the attendees and recognizing Robert Reynolds, FEMA Region II Regional Assistance Committee (RAC) Chair, and John Price from FEMA Region III. Mr. Salter said that three areas are important on our agenda today:

- Federal participation
- One Voice Initiative
- Radiological Incident Annex to the Federal Response Plan (FRP)

After introductions around the table, Mr. Salter provided the following update on FEMA activities:

UPDATE ON FEMA ACTIVITIES

- The FEMA Radiological Emergency Preparedness (REP) Contract has been awarded to ICF, Incorporated. It will have a one-year

performance period, with a possible extension.

- October 5, 2000 is the first exercise under the new contract.
- The Regions I, II, and III Scheduling Conference will be held on October 23-25, 2000. The Conference attendees will establish the three Regions' exercise schedule and there will be updates on FEMA activities.
- There have been FEMA/Nuclear Regulatory Commission (NRC) meetings on decommissioning of nuclear power plants. There is no agreement yet, but more information is being generated. Some of the points to be decided are whether sirens are needed, and the length of time that emergency preparedness must be in place.
- The REP exercise schedule is almost complete. After receiving information from all the FEMA Regions, we will distribute it.

Discussion:

- Charles Miller, NRC, asked how ICF taking over would affect the contract evaluators. Mr. Salter responded that FEMA adjusted for that. Dr. Miller asked if the contract evaluators were new or past contract evaluators, and Ms. Quinn replied that some had been with Argonne National Laboratory and some will be new.
- Mr. Salter said that there will be a 120-day transition period; also, as we increase Federal, State, and local participation as evaluators, we will adjust for that.

REP PROGRAM STRATEGIC REVIEW IMPLEMENTATION UPDATE

Presentation by Vanessa E. Quinn, FEMA

- FEMA is conducting a pilot program this fall to test the new exercise Evaluation Areas.
    - Four sites--Crystal River, Duane Arnold, Susquehanna, and Point Beach--are participating.
    - On August 23-24, 2000, FEMA conducted a dry run of the training that will be offered to the evaluators of these four exercises. The attendees critiqued the training and offered suggestions for changes, which will be incorporated into the course.
    - The pilot exercises will be evaluated by a Pilot Evaluation Team of FEMA Regional and Headquarters personnel, and the

Team members will meet in January, after the pilot exercises are completed, to discuss their critiques.
    - If the critique indicates a need for a change in the Evaluation Areas or the Evaluation Modules, these documents will be revised accordingly. Any revised documents will be posted for comments before becoming final.
- In addition to the exercise Evaluation Areas and Evaluation Modules, products that have been posted for comment include:
    - 1.6: Expand the Use of Credit
    - 1.7: Implement New Scenario Options
    - 1.8 - 1.10: Annual Letter of Certification
    - 1.11: Negotiate Six-year Agreements
    - 1.12: Conduct Staff Assistance Visits
    - 3.0: Use State, Tribal, and Local Personnel as Evaluators
    - 4.0: Include Tribal Nations in the REP Preparedness Process
    - 5.1: Establish Qualification Standards for the REP Evaluators course.
- FEMA has compiled and considered the comments received on the implementation products posted to date. The products have been--or will be--revised as necessary.
- Final implementation products for the Initiatives have been posted on the web site as they are completed.
    - The implementation products for Initiatives 1.2 - 1.5 (policy papers for 1.2, Frequency of Medical Services Drills; 1.3, Negotiate Use of Out-of-Sequence Demonstrations; 1.4, Give Direct Feedback; and 1.5, Correct Issues Immediately); 1.8 - 1.10, ALC; 1.12, Staff Assistance Visits; and 4.0, Include Tribal Nations, have been completed.
- Work on the implementation of Initiative 2.0, Increase Federal Participation in REP Exercises, has been completed, and it will be discussed in more detail shortly.
- One of the Initiatives, the Six-year Agreement, requires a rulemaking for implementation.
    - The NRC, under Falk Kantor, is continuing the rulemaking process for this Initiative, and FEMA is undertaking a parallel rulemaking effort.
- An Errata Sheet for NUREG-0654, in the form of an Addendum, will be posted for comment shortly.
    - The FRPCC members will receive copies of the Addendum for review when it is posted on the web site for comments.
- Additional papers will be posted for comment as they are completed.

- As was mentioned during the last FRPCC meeting, FEMA provided a means to electronically receive and post Stakeholder comments on specific implementation products that are out for comment.
    - The web address is: http://www.fema.gov/pte/carep.htm
    - The address for the REP Home Page, where you can review documents out for comment and posted in final, is: http://www.fema.gov/pte/rep/

Action:

- FEMA to send to the FRPCC members copies of the NUREG-0654/FEMA-REP-1, Rev.1, Addendum for review when it is posted on the web site for comments.

INCREASE FEDERAL PARTICIPATION IN REP EXERCISES

Mr. Salter introduced the topic by saying that work on the implementation of REP Strategic Review Initiative 2, Increase Federal Participation in REP Exercises, has been completed and recommendations have been forwarded.

Presentation by John Price, FEMA Region III, Chair of the Recommended Initiative 2 Team:

- Recommended Initiative 2.1, FEMA Should Take the Lead Role in Post-plume Exercises: It is recommended that FEMA designate a Preparedness, Training, and Exercises staff member to plan and coordinate Federal participation in all REP post-plume exercises. The individual would coordinate activities with the FRPCC Exercises and Training Subcommittees.
- Recommended Initiative 2.2, Complete Development of the Radiological Incident Annex: FEMA Headquarters Response and Recovery staff is currently revising the Annex. It is scheduled for interagency review by September 30, 2000.
- Recommended initiative 2.3, Establish an Interagency Task Force to Review Various Response Committee Charters in Accordance with the National Performance Review: It is recommended that this Initiative be taken up by the FRPCC and National Response Team for action.
- Recommended Initiative 2.4, Identify Additional Resources to Enable FRPCC Agencies to Participate in a Comprehensive Exercise Process:

It is recommended that FEMA encourage all FRPCC agencies to review the five-year exercise schedule in order to plan for sufficient resources for post-plume phase exercises under the Federal Radiological Emergency Response Plan (FRERP) and budget and dedicate the necessary time, personnel, equipment, and training opportunities to participate as players in these exercises. It is also recommended that the FRPCC, or an appropriate Subcommittee, develop a unified Federal mission statement on exercise participation that can be used by each member agency in justifying its request for additional resources in its upcoming FY 2002 budget submission.

- Recommended initiative 2.5, Reinforce FRPCC's Role in Developing REP Policy: The role of the FRPCC in developing REP policy is fully supported. It is noted that the FRPCC Chair has and should continue to promote increased participation, and the FRPCC member agencies should plan sufficient resources and make the commitment to follow FRPCC guidance and participate as players.

Mr. Salter strongly supported the recommendations and the role of the FRPCC and its Subcommittees as partners with FEMA in implementing these recommendations. Mr. Salter continued with a discussion of how these recommendations would be implemented.

- The role of scheduling/coordinating exercise participation has been moved to Nancy Goldstein. We will rely on the Exercises Subcommittee, also. The larger issue is in obtaining the resources needed to accommodate the increase in Federal participation.
- In response to the Team's recommendations, FEMA will develop a mission statement and provide a letter from the FEMA Director encouraging Federal participation.

Mr. Salter then asked for some other ideas of what we might do and opened up the floor for comment.

Discussion:

- Eric Weinstein, NRC, made these points:
    - In working the exercise schedule with the FEMA Regions, Ms. Goldstein's authority to re-negotiate if there is an overlap should be recognized. Also, the post plume exercises should be more evenly spaced.
    - States and utilities put off the post-plume exercises, and they

are all done at the end of the six-year cycle. He suggested that we even them out more.

- Craig Conklin, Environmental Protection Agency (EPA), pointed out that it is not only REP exercises; look also at Department of Defense (DOD), Department of Energy (DOE), and Federal Bureau of Investigation (FBI) exercises.
- William Hansbury, Department of Veterans Affairs (VA), said that the VA has a problem in that there is no testing of what they do, that is, deal with the effects of radiation when it leads to mass casualties. It would be useful to let the agency exercise its specific response capability.
- Mr. Weinstein said that the NRC has found that utilities and States have some trepidation when they are being evaluated. FEMA has been good about acknowledging no fault. We need an opportunity to look at exercise scenarios to ensure that they support Federal play.
- Bob Conley, Department of Agriculture (USDA), urged prioritization of the letter from Director Witt. The USDA was reorganized in the past year and the new managers are asking where the exercise program came from. A letter would support the exercise activities.
- Mr. Conklin suggested that timing is important and the letter should come in after the elections. Dominick J. Urso, II, General Services Administration (GSA), said that he prefers it both ways. The sooner the letter comes out, the better for getting the funding requests in for FY 2002.
- Mr. Conley and other members asked that the letter be expedited.
- Mr. Salter responded that we will send the letter immediately and be careful of the tone. We will let the FRPCC review, and have a quick turnaround. Kent Gray, Centers for Disease Control and Prevention (CDC), Health and Human Services, said that it is also important to receive the letter in final so that the members will know when it goes out.
- Mr. Conklin said that it is doubtful that it will have an effect on the EPA, and Mr. Salter asked what would.
- Mr. Conklin responded that it is not high on EPA's list. In response to Mr. Salter's question about it being tied to weapons of mass destruction, Mr. Conklin said that they asked for 20 million dollars for weapons of mass destruction and received nothing.
- Mr. Salter said that the letter would be addressed to the agency heads, from Director Witt.

Actions:

- FEMA to develop a mission statement for Federal agencies' use in supporting budgeted exercise play.
- FEMA to prepare letter from Director Witt to heads of FRERP signatory agencies urging them to budget for and carry out exercise play in REP post-plume exercises.

ONE VOICE INITIATIVE

Presentation by Dr. Miller:

- The purpose of the One Voice Initiative is to initiate discussions with the FRPCC concerning improvements in communication and coordination among Federal agencies in responding to peacetime radiological emergencies under the FRERP.
- On June 27, 2000, the NRC sent a letter to the FRPCC concerning this Initiative, with an emphasis on events in foreign countries.
- There is significant value in looking at lessons learned from events, such as the criticality event in Tokai-Mura, Japan, and the Y2K Federal coordination effort, and ask the question "Who speaks for the Federal agencies?"
- The letter revisits the purpose of the FRERP, which recognizes appropriate Lead Federal Agencies (LFA) for responses to both foreign and domestic events with potential radiological consequences. Several Federal agencies may be expected to comment to the public about the event and to address the potential for such an event to occur in the United States. There is an ongoing need for the applicable Federal agencies to share and coordinate information with each other and with their stakeholders.
- The Federal Government needs to speak with one voice, and the proper avenue for pursuing this issue is the FRPCC.
- The Commission directed the NRC staff to ensure that discussions address and resolve concerns that the Federal Government needs to speak with one voice during such emergencies and encompass a broad range of alternatives, including:
    - A decentralized approach in which each agency responds to inquiries using a common base of information
    - A centralized approach in which the LFA is responsible for all external communications
    - An approach in which the White House is responsible for all external communications

    - An approach in which the FRPCC is responsible for all external communications
    - A graded approach where responsibility for communications would change as the scope or intensity of the emergency situation changes or public concerns escalate
- The Commission directed the NRC staff to recommend that the FRPCC seek routine involvement by a White House agency in its activities and in individual agencies' emergency exercises when the scenario, if real, likely would draw significant media attention.
- The NRC staff is volunteering to Chair an applicable committee or subcommittee that is assigned or formed to resolve the pending issues and establish the appropriate protocols.
- The NRC plans to identify the White House point of contact for emergencies in which the NRC would be the LFA and seek a White House official at least annually in an NRC reactor emergency preparedness exercise.

Discussion:

- Wendell Carriker, Department of Transportation (DOT), retired, said that a couple of agencies, such as Customs and the State Department, that are not at the meeting have new activities that may be relevant. Mr. Carriker then said that Mr. Conklin is on a Committee that meets at the State Department and asked how the One Voice Initiative would apply to this.
- Mr. Conklin responded that he supports the idea of a Subcommittee. A revised FRERP and/or procedure may result. The NRC is the lead for a power plant incident, Customs is the lead if a port is involved, State is the lead for an international event, and EPA if the foreign material impacts the United States. Everyone would have some involvement in what we are telling the public. Mr. Conklin agreed that we need active participation from some agencies that are not here today.
- Mr. Weinstein supports the position. The key is to elevate the process, once everyone has agreed, to the agency heads. This becomes a challenge in a larger agency.
- Mr. Conklin asked if we need a separate subcommittee or can the Federal Response Subcommittee (FRS) do this.
- Mr. Carriker pointed out that, under an exemption from DOT, the Conference of Radiation Control Program Directors (CRCPD) copes with incidents where the bell rings, including incidents where the

material comes in from foreign companies. The CRCPD provides guidance to the shippers without the need for DOT agreement.

- Mr. Conklin suggested inviting a CRCPD E-6 Committee representative to participate.
- Mr. Salter asked if the FRS has the right composition, and Mr. Weinstein responded yes; it has all the FRERP signatories, including the FBI.
- Mr. Salter then suggested assigning this responsibility to the FRS, and Dr. Miller was agreeable, as long as it is done in a timely manner. Mr. Salter asked if anyone was opposed to assigning this to the FRS, and Ms. Quinn asked if there is an international component to the FRS. Mr. Weinstein responded that there is some, since EPA is a member.
- Mr. Weinstein recommended turning this over to the Subcommittee without limits, since a FRERP or other document change may be necessary.

Decision:

- Mr. Salter asked for a vote on sending this tasking to the FRS. All nine FRPCC members in attendance, that is: USDA, DOD, EPA, Food and Drug Administration (FDA), GSA, Health and Human Services (HHS), National Aeronautical and Space Administration (NASA), and the VA, voted in favor.
- Karen Sagett, FEMA, suggested having a Co-chair for the FRS, and Dr. Miller was named as the Subcommittee Co-chair for this particular tasking.
- The NRC will develop a mission statement and a proposed schedule for this tasking.

Action:

- Dr. Miller to Co-chair the FRS for the Initiative and develop a mission statement and proposed schedule.

REPORT ON REGIONAL ASSISTANCE COMMITTEE CHAIR ADVISORY COMMITTEE (RAC AC) ACTIVITIES

Presentation by Mr. Reynolds:

- FEMA's new contractor is a major focus, as are the four pilot

exercises.

- With respect to Federal participation, the Regional counterparts vary in their level of participation. In Region II, USDA/EPA/HHS/NRC provide the most support; others do not. There is day-to-day planning as well.
- The exercise scheduling issue is tied in with onsite activities, and the RAC AC has talked about the resulting limitations. The RAC AC would like to consider the situation where onsite simulated cells would be independent of the utility schedule-a fuel outage tie-in with the offsite exercise, for example. The offsite exercise does not need to be tied into the utility. Exercise play by other Federal agencies brings additional credibility to the exercise activities.
- There is a need for Full Field Exercises, and the community is urged to carry this as a future agenda item on a regular basis. This could be rotated around country. States could exercise States without concurrent Federal activity.

Discussion:

- Dr. Miller asked Mr. Reynolds to expound on the concept of no utility tie-in.
- Mr. Reynolds responded that, at the scheduling meetings, there is reduced flexibility for States and locals in exercise scheduling, due to the need to tie in with onsite exercise scheduling.
- Mr. Weinstein pointed out that some FEMA Regions are not comfortable with separating plume and post plume. The utility is not needed for post-plume exercises.
- Falk Kantor, NRC, said the problem is that you almost need an exemption to the regulations to separate plume from post plume. However, it still would be acceptable for utilities to show flexibility.
- Mr. Salter asked if thought had been given to holding a national scheduling meeting. Mr. Reynolds responded that this has been discussed in RAC AC, and the RAC AC agrees that it would be desirable.
- Mr. Salter emphasized that the need to have a mechanism for national scheduling is heightened.
- Mr. Reynolds said that FEMA's Preparedness, Training, and Exercises Directorate has been putting together a good national schedule.
- Mr. Conley said that USDA Headquarters plays in exercises nationwide and sometimes is faced with four exercises scheduled in the same week.

Action:

- Consider the concept of a national scheduling meeting for REP exercises.

RADIOLOGICAL INCIDENT ANNEX

Presentation by Ms. Sagett:

- Completion of the Radiological Incident Annex has been an on-and-off project. Various Federal agencies wrote drafts. The last draft, dated October 6, 1998, was put together by the EPA and FEMA, and all the LFAs agreed to it. However, it was not coordinated with the FRP community and not consistent in format with the Terrorism Incident Annex.
- It was re-surfaced with FEMA's Response and Recovery Directorate to get something out during this Fiscal Year.
- The National Response Team issued a report containing issues between the FRERP and the National Contingency Plan.
- Ms. Sagett put together a new draft dated August 30, 2000 that is consistent with the Terrorism Incident Annex. Comments on the draft are due by September 29, 2000.
- There will be a meeting on October 11, 2000 for the LFAs; the meeting is open to any other Federal agencies that would like to attend.
- Since the draft was circulated we have heard concerns from the LFAs that the document is too long, that we do not need it, that we inappropriately reworded the FRERP, that there was not enough information on coordination with a terrorism event (we will look at the Terrorism Incident Annex, not the Radiological Incident Annex, for a terrorism event), and that the CDRG cannot be used to resolve conflicts. Another criticism of the Annex is that it does not adequately link a radiological incident to one caused by natural disasters.
- The Annex is in effect when the FRERP is in use and the FRP is activated because there is a Presidential declaration. If there is no presidential declaration, then the Annex is not applicable; the FRERP would be used.
- One LFA asked for an extension and postponement of the October 11th meeting. We will still hold the October 11th meeting in order to get a working group going. We would like to set up small working

group of the LFAs and selected other FRP agencies. All comments and issues would be turned over to this small working group to resolve.

- Ms. Sagett feels strongly that we need to pursue a Radiological Incident Annex that is consistent with the Terrorism Incident Annex; the FRP community needs to be involved in the Annex; and the Annex should address the situation where the FRERP is in use and there is a Presidential declaration or a declaration is imminent.
- Ms. Sagett then asked for reactions and suggestions and on the working group concept.

Discussion:

- Mr. Hansbury asked why only the LFAs and FEMA are referenced. It looks like the other Federal agencies do not need to comment. Ms. Sagett responded that this is consistent with the Terrorism Incident Annex, which only went through the major agencies for final concurrence.
- Mr. Conklin concurred on maintaining the meeting date. He also pointed out that we need to keep the National Contingency Plan (NCP) in mind, since a great deal of information is covered there. Mr. Conklin had a three-hour meeting on the Radiological Annex earlier in the week, and contractors are revising the language.
- Ms. Sagett said that we do not want to get into terrorism-related subjects in the Annex; Presidential Decision Directive (PDD) 39 is mentioned only in passing.
- Mr. Conley asked which agency said that the Catastrophic Disaster Response Group does not resolve conflicts, and Ms. Sagett said that DOE did, informally.
- Mr. Weinstein asked if comments were still needed by the 29th, and Ms. Sagett responded that we will need them by the first working group meeting. We will go over what we have received and comments can also be brought to the meeting. Some big issues are beginning to surface.
- Mr. Weinstein stated that it bothers him that we are tied to the Terrorism Incident Annex format, and it needs to be modified. A lot of the questions concerning FEMA's role without a Stafford Act declaration, or an imminent declaration, are not resolved. FEMA says that it cannot do a lot without a declaration. The FRERP needs to be changed, or FEMA needs to do an internal procedure about its role.
- John Lyver, NASA, said that, before the meeting on the 11th, he

would like to see every comment and by whom as read-ahead. Mr. Lyver asked if comments need to be formal or can they be informal, and Ms. Sagett responded that they can be submitted through e-mails and can be off the cuff.

- Mr. Gray asked for agreement that, after the small working group meets, nothing will be in stone until the other agencies review the document. Ms. Sagett responded that there would be another draft with a 60-day concurrence period. Fairly high-up officials of the LFAs and FEMA would sign to indicate their acceptance. Mr. Gray said that the Annex needs to be addressed by more than the working group, and others must have a chance to comment.
- Mr. Salter said that the Annex will go to everyone for comment before it is a done deal, and Ms. Sagett agreed.
- Dr. Miller said that the people who understand the FRP do not understand the FRERP, and he views the Radiological Annex as a tool for educating the FRP community on how you can link the two documents. Dr. Miller believes that the FRP does not lay out well how you work the transition from one to another.
- Mr. Conklin asked the FRPCC to consider that the EPA uses the NCP quite a bit. The NCP ties into revising Emergency Support Function (ESF)-10 to include the Radiological Annex.
- Mr. Weinstein responded that the issue of including the Annex in ESF-10 has been considered in the past, and agencies other than the EPA objected.

Mr. Salter then asked for the subcommittee reports:

EXERCISES SUBCOMMITTEE

Report by Lt. Col. Kevin Gamache, Defense Threat Reduction Agency (DTRA) Subcommittee Co-Chair:

- The Subcommittee met on September 5, 2000. All 27 signatory agencies to the FRP replied to the request for input to the National Schedule. Cassandra Ward, FEMA, has consolidated the duplications; there will be bi-annual meetings on the National Exercise Schedule.
- The Subcommittee discussed the Radiological Incident Annex. John Price, FEMA, addressed increased Federal participation in REP exercises. The Subcommittee reviewed the DTRA exercises and the Science Applications International Corporation was tasked to take a look at the DTRA exercise program. The Nuclear Weapons Accident

Response Steering Group will meet on November 2, 2000 (meeting actually took place on November 8th) to review and approve the plans for national level nuclear weapon accident exercises. The Exercises Subcommittee discussed its Charter, which is waiting for approval by the full FRPCC.

Discussion:

- Jeff Glick, FEMA, reported that his office addressed the FRPCC Exercises Subcommittee's recommendations in revising the National Exercise Schedule. The Subcommittee wanted the National Exercise Schedule updates to remain quarterly, and FEMA will do this, since REP exercise dates do change. With respect to duplicate entries: Different agencies wanted to be listed. FEMA did not want to adjudicate among the agencies, and will just take Point of Contact information. To help out, as of January 2001, there will be macros in EXCEL. The user can then look by agency/date/location/title and then compress all the titles together. Mr. Glick's office is adding instructions and acronym list. The next issue of the National Exercise Schedule will be out in 2001.

TRANSPORTATION ACCIDENTS SUBCOMMITTEE:

Report by William McNutt, FEMA, Subcommittee Co-Chair:

- In the middle of 1998, Richard Katz (FEMA) was asked to convene the Subcommittee to revise REP-5. Richard did that, and there were several State representatives on the Subcommittee.
- The Subcommittee developed a draft of Rev. 1 of REP-5. It was noticed in the Federal Register in December 1998 for a 120-day review and comment period. The date was extended upon request.
- The Subcommittee reconvened last December and went through the comments received in response to the Federal Register notice. Another draft was developed and provided to Subcommittee members and the FRPCC. Some minor changes were made and it is now ready for publication and notice in the Federal Register.
- Mr. McNutt wants the concurrence of the FRPCC today.
- Mr. McNutt and Mr. Carriker provided the FRPCC members with a paper [outlined below] indicating the need to determine the capabilities of survey instruments available to first responders. This study could be done by Mr. Eckerman of the Oak Ridge National

Laboratory if adequate funding could be provided by cognizant FRPCC members. The research project would cost approximately $125,000 and would be of great benefit to first responders involved in responding to transportation accidents, fixed nuclear facilities, terrorism events, and customs surveillance.

Discussion:

- Mr. Salter said that an e-mail message from Ron Fraass supports the publication of REP-5, but specifies that the I-1 table must be updated. Mr. McNutt responded that the Table can be done as a supplement, and not hold up the whole of REP-5.
- Mr. Carriker said that the issue of publishing REP-5 is not dependent on the survey instrumentation study [outlined below]. There is a strong need to know the capabilities of survey instruments; the study should be done, and he suggested Keith Eckerman to conduct the studies. REP-5 is a big improvement.
- Mr. Salter suggested that the FRPCC vote on publishing REP-5 in the Federal Register now and revising the table at a later date.
- A vote was taken, and all nine members of the FRPCC agreed with Mr. Salter's proposal.
- Mr. Salter thanked Mr. Carriker, who has retired, for his service to the FRPCC. Mr. Carriker offered his services to continue, if needed.

Action:

- Publish FEMA-REP-5 and notice the publication in the Federal Register.

The survey instrumentation study referenced above is described, in a paper entitled Response Capabilities of Radiation Survey Meters to Specific Radionuclides, as follows:

- Responders to radiological emergencies in transportation or at fixed facilities need to know whether the radiation survey instruments they have can detect the radiation that is emitted by the radioactive materials involved. Tabulated information on the response capabilities of meters commonly available in the 1980's and early 1990's was included in an appendix in FEMA-REP-5.
- The response capabilities of the CDV-700 and the CDV-715 were categorized for about 75 of the most commonly transported

radionuclides.

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  - For each radionuclide, the capability was classed as GOOD, SOME, or NONE, based on the instrument being able to detect a quantity of the radionuclide that presented a common radiological risk.

- The response capabilities were determined by computations involving characteristics of each instrument and radionuclide.
  - Dr. Keith Eckerman of the Radiation Dosimetry Group at Oak Ridge National Laboratory (ORNL) computed these response capabilities in the late 1980's.
- The emergency response community does not rely on the CDV-700 and CDV-715 instruments at the present time as much as in the 1980's and early 1990's.
- Instruments that are likely to be used by teams for doing substantial radiological evaluations will be far more sophisticated than the CDV-700 and CDV-715.
  - The Customs Service is establishing a program that will result in thousands of inspectors having belt-type beepers, with sensitivity for detecting radiation at very low levels.
  - FEMA has a new geiger survey instrument, the CDV-718, that provides radiation dose information from the mR/hour to the high R/hour range.
  - One of the most substantial of the many DOD instruments is the ANDDR-77, which is somewhat similar to the CDV-718.
- Many of the DOE laboratories have requirements for instrumentation related to specific programs.
  - For example, DOE had a major role in the instruments used by the Customs Service.
- Emergency response personnel need updated information about the response capabilities of the radiation survey meters they are currently using.
  - As with the information provided in FEMA-REP-5 for the CDV-700 and CDV-715, the information should be simple and unambiguous.
  - It should be related to specific radionuclides and allow the emergency responder to have confidence about the basic usefulness of the instrument for evaluating the radiological risks from a particular radionuclide under specified ideal conditions.
- In addition to computing the response capabilities of each instrument

for all nuclides listed in the IAEA regulations, benchmark measurements should be made for all instruments.
- The radiation survey instruments selected for this study/classification should include instruments that will be used by early responders with limited expertise, as well as responders with more than minimal training.

TRAINING SUBCOMMITTEE

Report by Ms. Goldstein for John Peabody, Subcommittee Chair:

- The Training Subcommittee will meet on September 28, 2000 at the Emergency Management Institute. The subject for discussion will be "steps to eliminate the duplication of training efforts."
- Mr. Peabody liked the version of the Radiological Incident Annex distributed for comment.
- With respect to the One Voice Initiative, Mr. Peabody suggested that the FRERP agencies convene and put out information jointly. The LFA would make the announcement.

PROTECTIVE ACTION GUIDES (PAG) SUBCOMMITTEE

Presentation by Mr. Conklin, Subcommittee Chair:

- The PAG Subcommittee needs to be reconvened to look at the revised Protective Action Manual. The numbers have not changed, but it has been put into plain English; it is more user friendly, and incorporates the new food guides. There is a need to pull other agencies in to give it a good review.
- Mr. Conklin asked the FRPCC agencies to send him the names of appropriate members via e-mail, within the next two weeks. Mr. Conklin's e-mail address is: conklin.craig@epa.gov.

Action:

- FRPCC members to send to Mr. Conklin, by October 4, 2000, the names of appropriate members for the PAG Subcommittee.

ENVIRONMENT, FOOD, AND HEALTH SUBCOMMITTEE

Report by Mr. Conley, Subcommittee Chai

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- The Subcommittee has completed its charter and upgraded the instructions, as a result of the exercise in August. There is a need for operating instructions for the Advisory Team.

OFFSITE INSTRUMENTATION SUBCOMMITTEE

Report by Patricia Milligan, NRC, Subcommittee Co-Chair:

- The Instrumentation Subcommittee has completed its primary work on drafting a guidance document and background document containing a national standard for portable radiological monitoring instruments that has protection comparable to the standard for portal monitors.
- Since the last FRPCC meeting, the draft documents have been forwarded to the RAC Chairs for comment, and the Instrumentation Subcommittee should receive a compilation of those comments, for review, by the end of September 2000.
    - The primary issue raised by the RAC Chairs so far is the finding that it would take approximately 19 minutes to monitor an adult using a CDV-700 with a standard probe, as opposed to the 90 seconds for monitoring cited in FEMA-REP-14.
    - This is an important finding, since the State and local governments use the monitoring time to calculate the number of personnel required to monitor 20 percent of the offsite population residing around specific commercial nuclear power plants. It was further determined that the CDV-700 can be retrofitted with pancake probes that would reduce the individual monitoring time from 19 minutes to approximately three minutes.
    - After the RAC Chairs' review, the next action is a technical review of the documents by the CRCPD.
- The Subcommittee forwarded inventory of FEMA excessed radiological instruments and sources for distribution to the CRCPD members. As a result, three States (Kansas, Michigan, and Wisconsin) requested shipments of radiological instruments to support their REP Program activities. FEMA shipped these instruments to the three States at no cost to the States.

Ms. Milligan also commented that:

- The draft guidance document on portable instrumentation is out to the RAC Chairs for comment by the end of month.

OFFSITE FRPCC RETREAT

Presentation by Mr. Salter:

- Mr. Salter suggested an offsite FRPCC retreat in order to revitalize the Committee and encourage the discussion of issues before the Committee. It would be offsite for one day with an agenda.
- Mr. Salter asked the members to think about this possibly between now and the next meeting, and it will be placed on agenda for the next meeting. Between now and the next meeting, Mr. Salter will contact the agencies that have not been participating in FRPCC meetings.
- The retreat could be held at the Emergency Management Institute in Emmitsburg, perhaps for two days. It would be an opportunity to know each other better.

Discussion:

- Mr. Conklin said it is a good idea and suggested using a facilitator to free-up Mr. Salter. The facilitator would take notes, etc., and also pre-survey the members and help to set an agenda. Mr. Conklin can recommend a specific facilitator.
- Mr. Conley said that Mount Weather is an option, also.

MEETING SUMMARY

Mr. Salter summarized the meeting results as follows:

- Prepare a letter from the FEMA Director to the agency heads and circulate it in advance.
- Emphasize exercise scheduling, and seriously consider a national scheduling meeting.
- Ms. Goldstein to develop a mission statement for the Federal agencies' use in requesting budgeting for participation in REP exercises.
- Dr. Miller to prepare a mission statement for the One Voice Initiative

and also to Co-chair the FRS for that initiative.

- Radiological Annex meeting to be held on October 11, 2000. Late comments will be accepted. A working group will be formed. Consider inclusion of the NCP where appropriate.
- There were no comments on the Exercises Subcommittee's charter. It is therefore in place and will be signed today.
- Publish REP-5.
- Reconvene the PAG subcommittee and send names to Mr. Conklin.

Mr. Salter said that he will schedule the next FRPCC meeting and notify the members as soon as possible.

The meeting was adjourned.

ACTION LIST
FRPCC MEETING
September 20, 2000

1. FEMA to send to the FRPCC members copies of the NUREG-0654/FEMA-REP-1, Rev.1, Addendum for review when it is posted on the web site for comments. ***(Completed)***

2. FEMA to develop a mission statement for Federal agencies' use in supporting budgeted exercise play. ***(Distributed for a second review)***

3. FEMA to prepare letter from Director Witt to heads of FRERP signatory agencies urging them to budget for and carry out exercise play in REP post-plume exercises. ***(Distributed for a second review)***

4. FEMA to consider the concept of a national scheduling meeting for REP exercises.

5. Dr. Miller to Co-chair the Federal Response Subcommittee for the One Voice Initiative and develop a mission statement and proposed schedule for carrying out the tasking.

6. FEMA to publish FEMA-REP-5 and notice the publication in the Federal Register.

7. FRPCC members to send to Mr. Conklin, by October 4, 2000, the

names of appropriate members for the PAG Subcommittee.

8. FEMA to ask Department of State for a replacement FRPCC member for Laura Schmidt, who is on an overseas assignment, and to ask DOT for a replacement for Wendell Carriker, who has retired.

Updated: July 12, 2001

Chemical and Radiological Preparedness Division

Mission: Support state and local government in establishing and maintaining a capability to successfully prepare for and respond to a chemical, radiological or other hazardous materials emergency.

Chemical Stockpile Emergency Preparedness Program Branch

Provide a comprehensive program to assist States/Tribes/Local governments in preparing for a chemical emergency in communities surrounding the chemical weapons stockpiles.

CSEPP Planners Web Site

Radiological Emergency Preparedness Program Branch

Provide a comprehensive Radiological Emergency Preparedness Program to assist States/Tribes/Local governments in preparing for and responding to the spectrum of radiological emergencies.

Federal Register Notices, June 11, 2001
REP Exercise Evaluation Methodology
Alert and Notification

Federal Radiological Preparedness Coordinating Committee

HAZMAT Program Branch

Develop and administer a program for assisting State/Tribes/Local governments for and responding to HAZMAT incidents.

CHER-CAP Information

Electronic Information Exchange/Bulletin

Radiological Training Courses
FEMA Regions
Upcoming Conferences/Workshops
Federal Register Notices
Comment and/or question form
Published Public Comments
Program Documents

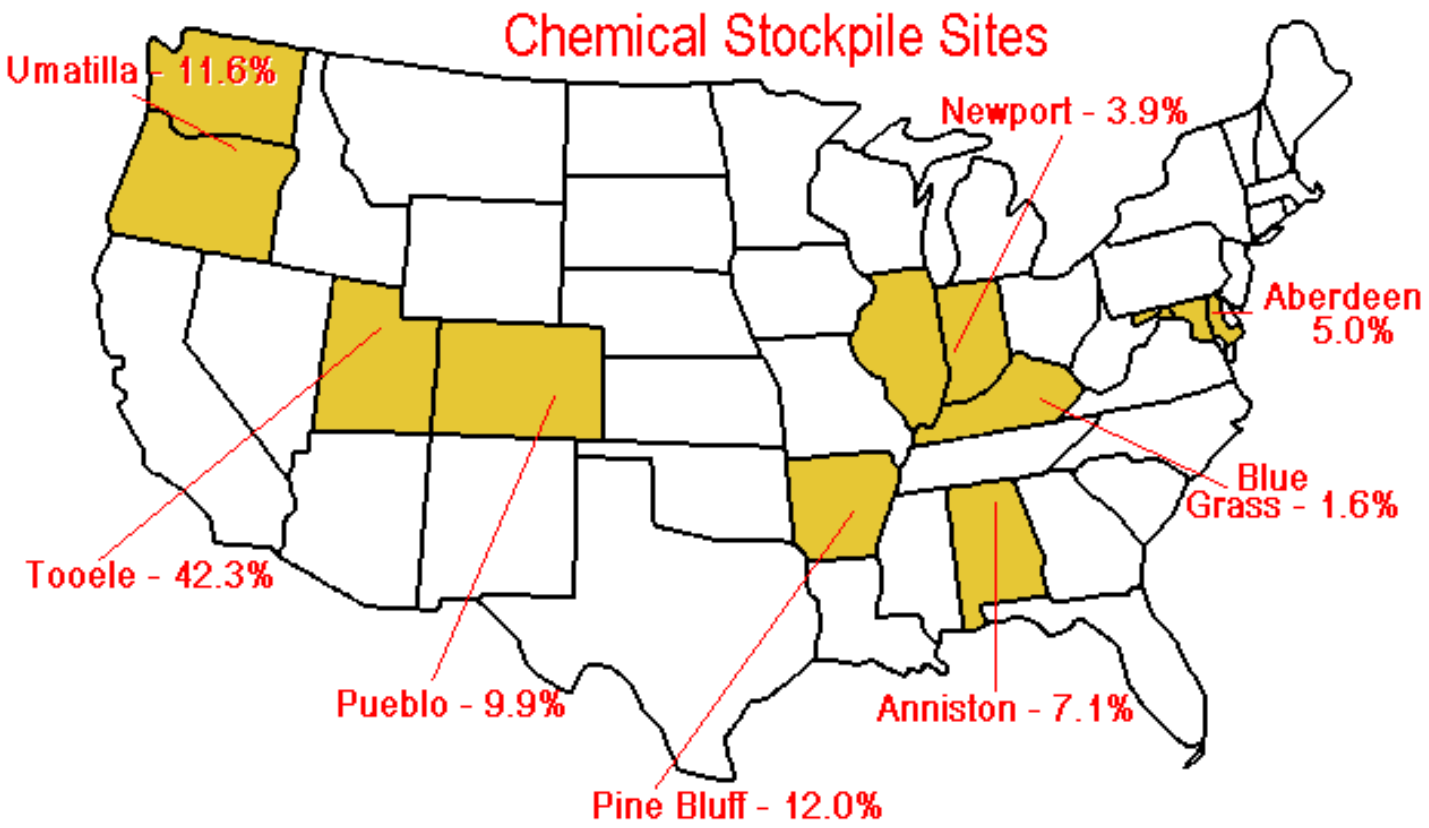
Useful Internet Links

SALEMDUG
National Response Team
Nuclear Regulatory Commission

FOOTER: FEDERAL EMERGENCY MANAGEMENT AGENCY

Preparedness, Training and Exercise Banner, this is an image map, please refer to text links below.

The United States Congress has directed that certain kinds of chemical weapons stockpiled at eight U.S. Army installations in the continental United States must be destroyed over the next several years. In these eight communities (see map), emergency plans and capabilities are being expanded for the slight but real threat of an emergency involving chemical agents. Overall, this effort is called the *Chemical Stockpile Emergency Preparedness Program* or *CSEPP*.



Experts believe the chance of an accident involving these obsolete chemical munitions is remote. But local officials and responders have to be ready for such an emergency today and every day until the stockpile in their community no longer exists.

With the help of state and federal agencies, these communities have plans and procedures in place now to deal with a stockpile accident. Moreover, they are constantly striving to enhance that preparedness.

The Army, as custodian of the stockpiles, and the Federal Emergency Management Agency (FEMA), which has long-standing knowledge and experience in preparing for and dealing with emergencies of all kinds, provide funds, guidance, resources, training and o ther support. In addition, other Federal agencies, such as the U.S. Environmental Protection Agency and the U.S. Department of Health and Human Services, also lend their expertise in specific areas of the program.

CSEPP, then, is a joint effort, or partnership, of state, local and federal government.

- CSEPP Qs & As
- Risk Communications and CSEPP, a 525 KByte .pdf file
- Alert & Notification
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- Oak Ridge National Laboratory Emergency Management CSEPP Program

Chemical Stockpile Disposal Program

December 5-7, 2000 CSEPP Planning Conference Information

Updated: September 23, 1999

CSEPP

CSEPP: Q's & A's

WHAT IS CSEPP?

CSEPP is the Chemical Stockpile Emergency Preparedness Program.

It is one facet of the multi-hazard readiness program in eight U.S. communities to deal with natural and man-made emergencies of all kinds. Depending on the location of the community, such emergencies may include tornadoes, hurricanes, earthquakes, floods, fires, hazardous materials spills or releases and transportation and industrial accidents.

The program's goal is to improve preparedness to protect the people of these communities in the unlikely event of an accident involving this country's stockpiles of obsolete chemical munitions.

WHERE ARE THESE STOCKPILES LOCATED?

The stockpiles are located in eight communities in the continental United States and on Johnston Atoll, an island in the Pacific. Because two of the eight stockpile sites are near state borders, 39 counties in 10 states participate in the program. The Army stockpile sites and participating states are:

Anniston Chemical Activity located on Anniston Army Depot (Alabama)

Blue Grass Chemical Activity located on Blue Grass Army Depot (Kentucky)

Edgewood Chemical Activity located in the Edgewood Area of

Aberdeen Proving Ground (Maryland)

Newport Chemical Activity (Indiana & Illinois)

Pine Bluff Chemical Activity located on Pine Bluff Arsenal (Arkansas)

Pueblo Chemical Depot (Colorado)

Tooele Chemical Activity located on the South Area of Tooele Army Depot (Utah)

Umatilla Chemical Activity (Oregon & Washington)

WHO'S INVOLVED IN THIS EMERGENCY PREPAREDNESS PROGRAM?

Local and state emergency services, public health, environmental, fire and rescue, law enforcement and medical services agencies have major roles, along with elected and appointed officials.

The Army, as custodian of the stockpiles, and the Federal Emergency Management Agency, which has long-standing experience in preparing for and dealing with all kinds of emergencies, provide funding, training, guidance and technical support and expertise. Other federal agencies, such as the U.S. Environmental Protection Agency, the U.S. Department of Health and Human Services also lend their expertise in specific areas of the program.

The program is a cooperative effort among local, state and federal agencies and jurisdictions. Community and public participation in and knowledge of the program is essential to its success.

WHEN WILL THIS PROGRAM BEGIN?

The program is well underway. Communities and states are already reaping the benefits in improved emergency facilities, equipment, training and planning know-how. Many of these enhancements increase their capabilities to deal with more likely emergencies such as transportation accidents involving hazardous materials, floods and

fires, in addition to a chemical stockpile emergency. And, these and other planned emergency preparedness enhancements will remain after the stockpiles have been eliminated.

Among the enhancements in place or coming soon are: new command and public/media information facilities, communications equipment, sirens and tone-alert radios to warn and instruct the public, computerized planning and accident assessment tools, automated on-post and off-post communication systems and improved training of emergency personnel.

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RISK COMMUNICATIONS AND THE CHEMICAL STOCKPILE EMERGENCY–PREPAREDNESS PROGRAM

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ACRONYMS AND ABBREVIATIONS

AIDS	**acquired immune deficiency syndrome**
ANAD	**Anniston Army Depot**
BGAD	**Bluegrass Army Depot**
CAC	**Citizen Advisory Committee**
CAIRA	**Chemical Accident Incident Response Action**
CDC	**Center for Disease Control**
CRDEC	**Chemical Research Development and Engineering Center**
CSDP	**Chemical Stockpile Disposal Program**
CSEPP	**Chemical Stockpile Emergency Preparedness Program**
DA	**Department of the Army**
DATs	**Army's Drain and Transfer Program**
DEH	**Department of Environmental Health**
DHHS	**Department of Health and Human Services**
DPEIS	**Draft Programmatic Environmental Impact Statement**
EIS	**Environmental Impact Statement**
EOC	**emergency operations center**
EPA	**Environmental Protection Agency**
EPI	**emergency public information**
EPZ	**emergency planning zone**
ERCP	**Emergency Response Concept Plan**
FEMA	**Federal Emergency Management Agency**
FPEIS	**Final Programmatic Environmental Impact Statement**
FUDS	**Formerly Used Defense Sites**
HCS	**Hazard Communication Standard**
ICCB	**Intergovernmental Consultation Coordination Boards**
IRZ	**Immediate Response Zone**
LBAD	**Lexington Bluegrass Army Depot**
LULU	**Locally Unwanted Land Use**
MOU	**memorandum of understanding**
MSDS	**Material Safety Data Sheet**
NASA	**National Aeronautics and Space Administration**
NATO	**North Atlantic Treaty Organization**
NFIP	**National Floodplain Insurance Program**
NEPA	**National Environmental Policy Act of 1969**
NIMBY	**Not In My Back Yard**
NOAA	**National Oceanic and Atmospheric Administration**
NRC	**National Research Council**
OPM–CSDP	**Office of the Program Manager for the Chemical Stockpile Disposal Program**
OSHA	**Occupational Safety Health Administration**
PAO	**Public Affairs Officer (for Army)**
PAZ	**Protective Action Zone**
PCBs	**polychlorinated biphenyls**
PEIS	**Programmatic Environmental Impact Statement**
PIO	**public information officer**
ppm	**parts per million**
PRA	**probabilistic risk assessment**
RCRA	**Resource Conservation and Recovery Act of 1976**

RFP	**Request for Funded Proposals**
ROD	**record of decision**
SARA	**Superfund Amendments and Reauthorization Act of 1986**
STI	**scientific and technical information**
TEAD	**Tooele Army Depot**
TLV	**Threshold Limit Value**
TMI	**Three Mile Island**
TPQ	**threshold planning quantity**
TQ	**Threshold Quantity**
USACMDA	**U.S. Army Chemical Material Destruction Agency**
USATHAMA	**U.S. Army Corps of Engineers Toxic and Hazardous Materials Agency**
USANCA	**U.S. Army Nuclear and Chemical Agency**
USGS	**U.S. Geological Survey**

EXECUTIVE SUMMARY
CSEPP RISK COMMUNICATION SOURCE BOOK

The Source Book has been developed for the Chemical Stockpile Emergency Preparedness Program (CSEPP) in support of the training course on risk communications. The purpose of the document is to provide a fairly comprehensive document on risk communication research and recommended practices, especially as they relate to the CSEPP.

The first chapter discusses the background of the program, including why the CSEPP was created and the development of the program to date. Using the communications perspective suggested by Covello and colleagues, the existing practices of communicating risk information about chemical weapons and the associated efforts in emergency planning, storage, and eventual disposal are described.

Risk communication issues specific to the CSEPP are then discussed. Examples selected from the CSEPP and the Chemical Stockpile Disposal Program (CSDP) illustrate some of the major risk communication problems as well as some examples of good risk communication practices. Programmatic decisions characterized as good risk communication practices are also discussed. A series of questions helps the reader understand the broad spectrum of risk communication topics related to the CSEPP.

Basic concepts addressing principles of risk communication are discussed in Chapter Two. The distinctions between risk assessment, risk analysis, risk management, and risk communication are clarified along with the definition of a hazard and risk identification. Both micro and macro perspectives on risk assessment are examined. The differences between and among expert and non-expert risk definitions and measurements are noted. Variability in how members of the general public and experts view the acceptability of risk is discussed. We also examine factors which determine if effective communication has taken place.

The third chapter presents a comprehensive review of the risk communication literature. By categorizing the perspectives, noting the common theories and methodologies, each perspective is described and then assessed as to its robustness and maturity.

Chapter Four provides an overview of other issues specific to risk communication perspectives. The focus is on the community and collective risk, not on individual behavior or attitude toward risks. In CSEPP there is no debate over acceptable risk—all agree with the notion of maximum protection and the eventual elimination of risk. Among the issues examined are problems of uncertainty, timing, and the direction of information flow.

Further issues directed toward informing the public about risks include an analysis of the intent of the communications, public information needs, the release of information, and public education. Next discussed are issues related to the social context in which risk communication takes place and the factors related to credibility and trust. How to involve the public and deal with disagreements are examined, and, finally, issues related to ethics and responsibilities of the communicators and the publics involved.

Chapter Five discusses risk communication as a social process. This is organized around the basic model of the communication process that emphasizes the relationships between the source, channel, message, audience, and eventual outcome or impact. Some of theoretical approaches behind the research findings on the risk communications process bias the recommendations as presented. Among the issues discussed are the use of multiple communication channels, the factors associated with the measurement and comparison of risks (including how the risk from a chemical agent accident can be realistically compared), the six stages of human response regarding risk communications (receiving, understanding, believing, personalizing, responding and information seeking), addressing the problems citizens have in processing scientific information, and evaluating message dissemination. Also discussed are the factors related to message style: specificity, consistency, accuracy, certainty and clarity. Timing is another critical aspect of the risk communications process in both emergencies and during pre-emergency communication effort.

Risk communication activities are, by design and intent, a social intervention which have impacts on people exposed to the information. It is also important to identify and understand the different types of audience participants and how risk communications eventually influence individual behavior. Researchers have had difficulty linking public education efforts with actual behavioral changes and in suggesting measures to combat public apathy.

In the sixth section we bring together recommendations from risk communication practices and organize them as risk communication strategies. We do not advocate the application of any single strategy as recommendations for specific actions are largely subjective and situation specific. What is stressed is the importance of developing a well integrated risk communication program as a companion to the CSEPP activities.

In the final section we attempt to synthesize the findings from the empirical research with recommendations made in the conceptual literature and current guidance manuals available to risk communicators, planners, agencies, and emergency personnel. We also return to address the questions about risk events posed earlier in light of the findings regarding the critical issues.

In a world of increasing risks, appropriate and continual dialogue with affected publics about risks should be one of the foremost concerns of public agencies, especially those involved in risk communications for the CSEPP. How that information is interpreted or modified by existing beliefs remains problematical. To enhance risk communication efforts, we need communications of risks in a language easily understood by the majority of publics. Effective public participation also depends substantially upon the development of indigenous technical and analytic resources and upon the institutional means to act upon and incorporate that increased knowledge.

It is clear that members of the public will continue to differ in scope of involvement even at the group level. Differing thresholds of involvement over time requires alternative communication strategies appropriate to the level of concern and the hazard involved. Although a large array of participation and prescriptive techniques exists, current knowledge does not allow for successful prediction as to which strategies are likely to be most effective under given conditions.

Risk communicators face increasing pressure to present risk issues and respond to risk related questions raised by various parties and constituencies. Whether acting alone or with others, managers of public and private agencies, industry representatives, and governmental bodies must also accept that media communications outlets can and will significantly influence the agenda of most risk communication efforts. Furthermore, newer forms of communication technologies will continue to alter methods used to translate assessments of risks for risk management. Immediate access to data via personal computers places managers in the position of having to make on the spot decisions about conveying information about risks.

Risk communicators for the CSEPP must present risk issues in a fair and unbiased manner as well as answer questions raised by various parties and constituencies at various points in the program. There is every indication that a better understanding of hazards posed by chemical munitions to individuals, groups, and communities can be developed and that preparedness strategies can be enhanced for the CSEPP through better risk communication programs.

1. RISK COMMUNICATION FOR THE CHEMICAL STOCKPILE EMERGENCY PREPAREDNESS PROGRAM

1.1 INTRODUCTION

The purpose of this document is to provide a fairly comprehensive source book on risk, risk management, risk communication research and recommended risk communication practices. It does not merely summarize each publication in the risk communication literature, but attempts to synthesize them along the lines of a set of organizing principles. Furthermore, it is not intended to duplicate other guidance manuals (such as Covello et al.'s manual on risk comparisons). The source book was developed for the Chemical Stockpile Emergency Preparedness Program (CSEPP) in support of the training module on risk communications. Although the examples provided are specific to CSEPP, its use goes beyond that of CSEPP as the findings apply to a broad spectrum of risk communication topics. While the emphasis is on communication in emergency preparedness and response specific to the CSEPP, the materials cover other non-emergency communication settings.

1.2 BACKGROUND

The CSEPP was created to improve emergency planning and response capabilities at the eight sites around the country that store chemical weapons. These weapons are scheduled to be destroyed in the near future. In preparation of the Draft Programmatic Environmental Impact Statement (DPEIS) for the Chemical Stockpile Disposal Program (CSDP), it was proposed that the Army mitigate accidents through an enhanced community emergency preparedness program at the eight storage sites. In 1986, the Army initiated the development of an Emergency Response Concept Plan (ERCP) for the CSDP, one of 12 technical support studies conducted during preparation of the Final Programmatic Environmental Impact Statement (FPEIS). The Army adopted emergency planning as mitigation in their Record of Decision (ROD) which was made in January, 1988. In fact, emergency planning was one of the major factors which the Army used to justify the selection of the on-site disposal option over an alternative involving off-site transportation.

Shortly after the ROD, the then Under-Secretary Ambrose directed the Office of the Program Manager for Chemical Stockpile Demilitarization Program (OPM-CSDP) to begin

implementation of that plan due to the risk of accidents from continued storage of the stockpile. To support that effort a series of technical support studies was initiated, the Army provided technical assistance to communities to upgrade their plans and more detailed concept plans were started. Later that year the Army entered a Memorandum of Understanding (MOU) with the Federal Emergency Management Agency (FEMA) to help create the CSEPP program. Army responsibility was transferred to the Deputy for Chemical Demilitarization in the Pentagon.

Although the CSDP and CSEPP are two separate programs, their characters and interrelationship cannot be readily dismissed. The disposal of chemical weapons in the continental United States is a complex undertaking. The technology, in the mind of some of the public, is unproved, risky, is fraught with uncertainty, and not well understood. The managerial arrangements surrounding the program are also complex. Assorted agencies and organizations are involved with the program, often with very different perspectives on managing the program and on policy issues. Furthermore, the program is not independent of other military endeavors. Chemical weapons disposal has been tied in with the binary weapons program, treaty negotiations, base closures, environmental cleanup, disposal of other munitions, and biological weapons. The implication of such characteristics is clear--it has been and will continue to be very difficult to communicate information about the program with the public in general and with various sub-populations with special interests or agendas of their own.

The CSEPP is geared to both the CSDP and ongoing storage activities because the munitions in storage are not totally benign. Periodically the Army find munitions which leak. Crews must be sent in to repackage the leaking munitions. Some allegations have surfaced that the munitions are in a deteriorating state, and may be more likely to spontaneously detonate.

The types of potential communication problems about the risks of the chemical agents are not without precedent. Both the nuclear and chemical industries in the U.S. (as well as other countries) face similar situations. Those industries also present complex technologies, pose a potential threat to public health and safety, have complex organizational structures, and have ties to other issues such as nuclear weapons production and environmental degradation.

One result of recognizing communications problems in these industries was the emergence of the field of "risk communication" research. The chief goal of the research was to improve the dialogue or communications process among risk assessors and scientists, risk managers and government officials, and the publics at risk. Covello et al. (1987) suggest that risk communications can address 4 basic communication problems. First, risk

communication research addresses problems about the information to be communicated—such as deficiencies in scientific understanding, uncertainties, and the basis for highly technical analyses. Second, the research helps to deal with problems associated with the source of the information—such as lack of trust or credibility in the risk analysis, scientific disagreement among experts, failures of experts to disclose limitations on the analyses, lack in understanding of public concerns and fears, or lack of data to address specific concerns both of experts and the public. Third, risk communication research deals with problems regarding channels of communication—including problems related to selective or biased media reporting, premature disclosures of scientific information, outright inaccuracies, or oversimplifications of a risk problem. Finally, risk communication studies address receiver problems such as differing perceptions about the risk, lack of interest in risk issues, overconfidence in the ability to avoid risks, strong but inaccurate beliefs, misguided expectations, need for greater certainties, and difficulties in understanding complex information.

1.3 RISK COMMUNICATION IN CSEPP AND THE CSDP

Using the communications perspective suggested by Covello and his colleagues we can describe the existing practices of communicating risk information about chemical weapons and the associated efforts on emergency planning, storage and eventual disposal. The sources of information, the content, and the channels for communication are listed in Table 1-1. As one can see from the table, many organizations are involved in providing a wide variety of information. A prime source of information has been the OPM-CSDP, now part of the U.S. Army Chemical Material Demilitarization Agency (USACMDA). The FPEIS published by the Army summarizes much of the technical risk information. More detailed information is found in the Resource Conservation and Recovery Act (RCRA) Permit Applications, the M-55 Technical Support Studies, and the National Environmental Policy Act (NEPA) Technical Support Studies, including the detailed and voluminous Risk Analysis and the Emergency Response Concept Plan (ERCP). The OPM-CSDP also published the results of the community study groups which were funded by the Army to do independent assessments of the impacts of the program, and several implementation plans.

Table 1-1

Currently the USACMDA is supporting the preparation of studies to verify that the programmatic ROD is supported at each site when more detailed data are used. Site-specific NEPA documents include discussions of revisions in emergency plans, design of warning systems, and a revised risk analysis based on findings from the incineration of chemical agents at Johnston Atoll in the Pacific.

Additional risk information has been and is being generated by the CSEPP which is being implemented by the Department of the Army (DA) and the Federal Emergency Management Agency (FEMA). This includes the Site-specific ERCP which identify areas surrounding the current storage sites that are at risk, the Emergency Planning Management Plan, and emergency planning technical support studies which deal with risk reduction from various planning alternatives, accident assessment policies, reentry strategies, and other risk-related topics. In addition National and state level public information programs are being developed. FEMA has also published a very general public affairs brochure on CSEPP.

Other risk information has been generated by the U. S. Army Nuclear and Chemical Agency (USANCA), including a new atmospheric dispersion model and the Chemical Accident Incident Response Action (CAIRA) Manual Revision. The Department of Health and Human Services (DHHS) is also involved through the development of a medical training program. A variety of other sources of risk information exist both within and outside the Army including Army regulations, the Edgewood Research and Development Center [formerly the Chemical Research Development and Engineering Center (CRDEC)], technical reports, other Army technical reports, the North Atlantic Treaty Organization (NATO) and in the open literature. Much of the relevant literature is referenced in the technical reports.

Risk information has been communicated in a variety of ways. The CSDP periodically issues press releases and conducts interviews with media personnel. NEPA Scoping Meetings were held at each storage site. NEPA hearings were conducted following publication of the draft Environmental Impact Statements (EISs). A NEPA Public Information Package was prepared during the programmatic phase. In addition, various meetings were held with state officials during the NEPA programmatic phase and will continue during the NEPA site specific phase and the permitting process. During the programmatic phase, sets of background reports were sent to local libraries at each of the eight sites that store chemical weapons. As part of the NEPA mitigation, Intergovernmental Consultation Boards (ICCBs) were established at each site. The purpose of the boards is to facilitate information exchange between the Army and the community. Periodically ICCBs hold closed meetings although some are open to the public.

The remainder of communications are fairly standard, although some installations periodically hold open houses or have produced videotapes on their general missions that can be shown to community groups.

The basic structure of communications in the CSDP/CSEPP is depicted in Fig. 1-1 in a very general fashion. Several observations can be made about the organizational structure of communications. First, information flows from both the program office and the installation Public Affairs Officers (PAOs) which are not hierarchically arranged. Thus it is possible that conflicting information can be issued. Second, most information is filtered through the media to the public leaving it open to journalistic license. Third, the ICCBs have few direct links to the public.

1.4 EXAMPLES OF RISK COMMUNICATION PROBLEMS IN THE CSEPP

While we have not systematically looked for risk communication issues in the CSEPP and CSDP, we have much anecdotal evidence that suggest such issues exist. The following examples were selected to illustrate some of the major risk communication problems about the existing chemical stockpile.

The first issue concerns conflicting information. Numerous incidents can be documented. For example, the public belief at one of the installations was that a couple hundred M-55 rockets were being stored. This belief stemmed from the miscommunications in the Army's Drain and Transfer Program (DATS) on fixing leaking munitions. A local official asked the installation how many munitions were involved. The response was a couple dozen. Mistakenly the local official thought that the size of the stockpile was very small. Local officials were later shocked when they learned there were actually 70,000 M-55 rockets in storage at the installation. At several sites installation personnel insisted that accidents would be confined within the site. After all this was an Army regulation. The risk analysis studies showed, however, that catastrophic accidents with severe offsite consequences could occur and could affect members of neighboring communities.

The second is the public's perception of information withholding. The public has not forgotten the Dugway, Utah, sheep kill incident in which the Army never admitted responsibility for the event. At Lexington Bluegrass Army Depot (LBAD), now called Bluegrass Army Depot (BGAD), Kentucky, an incident occurred where the Army, for a week on orders from a higher headquarters, denied responsibility for the inadvertent

detonation of smoke bombs that caused a nearby interstate to close and people to go to the hospital.

Figure 1-1. Information flows in the CSDP/CSEPP.

The incident is repeatedly raised by the news media and in public meetings.

The third issue involves the credibility of information. Due to incidents such as those cited above, some portion of the public does not believe any information developed by the Army. This lack of trust was reflected in the NEPA public hearings when critics of the Army frequently commented that the analyses were flawed, but those persons criticizing the documents could not say why or how the analysis should be altered.

The fourth issue has to do with the erosion of trust and credibility. For example, the Army decided to give, through FEMA, $100,000 to state and local governments for use in improving their emergency planning around the eight storage sites. When conflicts over how the money was to be divided arose at some sites, the money was withheld until agreement was reached on a unified distribution plan. At Anniston Army Depot (ANAD) the failure to receive funds led the county emergency planning organization to withdraw from any emergency planning for the CSDP for a short period of time.

A fifth issue is the provision of timely information. When a small amount of chemical agent was released at a pilot plant at Tooele Army Depot (TEAD), the Army delayed reporting the release to the state for about one week, resulting in severe criticism of the Army by state officials. At BGAD it took a local official 6 hours to find out that the igloo on post that had exploded (caused by dynamite) did not contain any chemical weapons.

All of these issues suggest the need for risk communication skills in the CSEPP. These skills are needed by anyone who can come in contact with the public or media either directly or indirectly.

1.5 EXAMPLES OF GOOD RISK COMMUNICATION PRACTICES IN THE CSDP

The CSDP program is not characterized by total pessimism. At some of the sites the Army has developed good communication and rapport with local communities. Furthermore some programmatic decisions can be characterized as good risk communication practices. These include:

- **informal meetings with interested citizens and citizen groups,**
- **community studies,**
- **extended comment period on Draft EISs, and**
- **implementation of the ICCBs.**

Informal meetings with interested citizens and citizen groups occur regularly at some installations or on an occasional basis at other sites. The chief value of the meetings is that they allow officials and critics of the program to receive personalized information and to get to know the people running the program. In July, 1993, the Army hosted a hearing at Pueblo Depot Activity to share information about the merits of incineration. Visitors handled gas masks and chemical weapons suits, examined mustard gas shells, and were allowed to inspect every report written about the CSDP since 1988.

At a congressional hearing the Undersecretary of the Army was asked if the Army would give the communities money to conduct independent assessments of the program impacts. The question led to the Army developing a Request for Funded Proposals (RFP) to fund any of the eight communities who wanted to conduct independent assessments. In total, five communities responded. The community studies reflected a legitimate attempt to allow some independent verification of the Army's studies and to involve communities in the scientific discourse. After the studies were funded, the Army also allowed community scientists access to all meetings and information that were being generated by the technical support studies and NEPA analyses.

The draft EIS on the CSDP generated considerable public comment, particularly on the risk assessment. Normally NEPA requires a 30 day comment period. The Army formally extended the period beyond that requirement and responded to all comments received after the formal comment period.

In the FPEIS and programmatic ROD the Army recognized that the program, because of its complexity and level of technical information, impacted communities surrounding the storage sites. To mitigate this impact the Army committed to implementing the ICCB concept. The ICCBs are designed to facilitate information exchange between the Army and state and local officials. Thus, by design, communities will become involved in the risk communication process.

1.6 RISK ISSUES

More basic than the above cited examples of communication problems are issues that fundamentally challenge the technical basis of risk information that currently exists.

These include:

- **perceived accuracy of risk analysis**
- **accident impacts**
- **ability to protect population**
- **chronic emissions**
- **long-term health effects**
- **decommissioning**

The basic source of technical risk information is found in the programmatic Probabilistic Risk Assessment (PRA). Parts of this study were classified by the Army because some sections provide information that could reveal the exact size of the chemical stockpile, which is classified information. In part because of the lack of public access and in part due to the credibility problem, the PRA has been heavily criticized. Among the issues raised by critics is that the analysis is not comprehensive nor does it include all possible accidents. Another criticism is that the risk analysis fails to fully reflect human errors that could occur. Other critics maintain that the PRA is biased in that the assessment underestimated the risk of some of the program alternatives. Although the Army spent considerable time to insure that these criticisms have been reasonably addressed, given the state of the art in PRA, the problems still remain in the mind of the public.

Another point of contention concerns accident impacts. A great deal of uncertainty exists over the amount of agent that would be released in many accident scenarios. Further uncertainty exists over whether liquid agent could get beyond the installation boundaries or if only a vapor cloud could travel that far. Large uncertainties also exist in the ability of dispersion models to predict accurately the course of the plume. Controversy has risen over the lethal dose of various chemical agents for infants, children, the elderly and for other vulnerable subpopulations.

A third area of great uncertainty and public questioning concerns the ability to protect people in an accident. Some communities have serious concerns about the Army's

ability to make a timely decision about the consequences of a release or whether the public would be notified in a timely fashion (if at all). Some critics have questioned the ability to evacuate people in time to prevent fatalities. Other concerns have been expressed over the use of protective equipment or the availability of agent antidotes.

Other publics, while not concerned about accident risks, raise issues about the effects from chronic emissions of agents or polychlorinated biphenyls (PCBs) from the incineration process. A secondary concern is the technical ability to monitor and detect such emissions. A related issue is the long-term health effects of acute and chronic exposure from such exposures and whether sufficient data exists to adequately assess the long-term risk.

A final overriding issue of concern to risk communicators is the decommissioning and future use of the facilities. Many fear that by accepting the risk of agent disposal facilities, the Congress will permit the Army to change their plans for decommissioning the disposal plants and ship in other hazardous wastes for incineration at these sites. The need to dispose of the chemical stockpile in Europe exacerbated this fear but those munitions were taken to Johnston Atoll in the Pacific and are being successfully disposed. The greater concern now is for munitions at formerly used defense sites (FUDS) and other likely or suspect sites where weapons were tested and/or buried.

1.7 QUESTIONS RELATED TO THE CSEPP

One problem in developing a risk communication program is determining the range of questions about risk for chemical agents that could be asked over the life cycle of the CSEPP. Manuals depicting methods for effective communication once the problem is identified are readily available, but conceptualizing the needs for an individual agency can overwhelm administrators and managers concerned with limited budgets and of publics highly sensitive to government actions. Although each question must be addressed individually for its appropriate context, certain elements of planning for risk communication can be incorporated into an overall risk communication program. In this section, we present a series of questions which illustrate the types of problems affecting an agency's efforts to communicate risk in the most effective manner. Although the questions are not meant to be comprehensive, we think the hypothetical questions about the CSEPP are ones most likely to be addressed in agency risk communication programs. Some of the more general questions are as follows:

- **What is the CSEPP about?**
- **What does risk communication have to do with the CSEPP?**
- **What are the differences in risks from chemical munitions storage versus incineration? On-site transportation? Handling?**
- **Who are trusted sources of information about chemical weapons? Who can I believe?**
- **Why can't people understand the technology that accompanies the risk for chemical agent munitions?**
- **Why can't the risk be made clearer to the publics involved?**
- **What accidents can happen? How likely are those accidents?**
- **How were the accidents identified? Can we be sure all possible accidents were identified?**
- **How will we know the Army is telling the truth?**
- **How will I know what to do if there is a release that goes off-post?**

1.7.1 Question Set 1 (Hazard Identification)

A storage tank of agent (HD-mustard) is found leaking into the soil by agency personnel conducting a routine inspection. The damage appears related to the initial deterioration of a valve on the canister containing the agent and, thus, unlikely to have leaked for a long period of time. After discovery, the release was reported to the Environmental Protection Agency (EPA).

QUESTION SET 1

- **What is in the tank/canister?**
- **Can the chemical explode?**
- **Is the groundwater affected?**
- **Can the chemical be safely cleaned-up?**
- **How long will the cleanup take?**
- **How can we tell if people living near the site have been exposed to any chemicals?**
- **Are there any long-term health effects possible from the leak?**
- **Why are people being evacuated so long after the spill was discovered?**
- **Why can't I return to my home?**
- **How can I tell if it's safe to let my animals out after I get home?**

1.7.2 Question Set 2 (Public Speculation about Technical Expertise)

A local farmer has a local newspaper reporter out to his farm because he perceives there is a problem with water from a well located near a military depot where chemical agents are being stored. The farmer thinks that agents are leaking from the storage tanks into a nearby stream during heavy periods of rainfall, causing health problems for his cattle. The local health department has investigated and found no likely problems with the tanks, but the possible health effects to both humans and animals remain unconfirmed but highly unlikely.

QUESTION SET 2

- **Why is there uncertainty about the health effects?**
- **How can it be proven that no agent has leaked out?**
- **What other problems have occurred that we have not been told about?**
- **Why haven't the state and local government monitored the situation more closely?**
- **How much agent does it take to produce lethal effects?**
- **Are certain people more vulnerable to agent effects?**
- **What impacts will it have on livestock?**

1.7.3 Question Set 3 (Credibility of Source/Message)

A small amount of agent released during on-site incineration of some chemical weapons is within exposure limits and the installation commander decides not to notify either the local health agency or inform the public about the release. Two days later, the press learns of the release and cries "cover-up." The questions to the agencies involve more than seeking of facts as the agencies immediately lose credibility for not reporting the release to the public.

QUESTION SET 3

- **Why wasn't the release reported right away?**
- **Is it true that other releases have not been reported?**
- **What are the criteria for reporting a release and who makes the decision to report?**

- **What will be emitted during routine operations?**
- **How hazardous are those emissions?**
- **Will there be long-term effects from exposure to low levels of emissions from the incineration process?**

1.7.4 Question Set 4 (Media as Sources and Channels)

When a terrorist group threatens to cause a release of chemical agent at one of the storage sites, reporters immediately become involved in negotiations. The questions asked of agency officials and local emergency response officials make the officials feel threatened and left out, fearful that the worst-case accident could occur.

QUESTION SET 4

- **Is there a way in which a terrorist could cause an accident?**
- **How dangerous are the chemicals in the munitions?**
- **What is the worst accident that could occur?**
- **How will it affect my children?**
- **Will it be better to get away from here while we can?**
- **How did this happen? Why wasn't security tighter?**
- **Does CSEPP include plans for such emergencies?**
- **Does sealing a room protect people in an accident?**

1.7.5 Question Set 5 (Institutional Credibility)

During a forum, citizens request information that is classified about the quantities of chemicals stored at a military base and about the probability of accidents and/or releases from stored chemicals.

QUESTION SET 5

- **Why won't you tell us about the amounts of chemicals stored on post?**
- **What is the most likely accident that can occur?**
- **What accidents are being planned for?**
- **If you can't tell us, how can we find out the information?**

1.7.6 Question Set 6 (Accuracy/Bias of Message Transmission)

During an emergency training exercise, local officials must provide the media with reliable and accurate information about why the exercise is being conducted and what the potential risks are from the chemical agents. Media representatives promise to supply information to the public but officials are skeptical that local distrust will alter the interpretation of the material provided.

QUESTION SET 6

- **Why was this accident scenario chosen for the exercise?**
- **In reality what is the likelihood that such an accident could occur?**
- **How can you tell if the exercise was successful?**
- **How long are the munitions going to remain on site?**
- **Exactly what are the characteristics of the chemicals and munitions involved?**

1.7.7 Question Set 7 (Fear of Citizen Overreaction)

Local officials are concerned about the types of questions they will receive when they disseminate tone alert radios to residences and institutions in the Emergency Planning Zones (EPZ), especially since there has been a general apathy about participation in the CSEPP from local residents. Officials must design a program that instructs residents on how the radio is used as well as answer questions about the risks residents face.

QUESTION SET 7

- **How will officials decide where and when to warn people?**
- **How will I receive a warning?**
- **Why is a dual indoor/ outdoor warning system needed?**
- **Do people need protective clothing or masks if they are in the immediate response zone (IRZ)?**
- **How will my children in school in the IRZ be protected?**
- **Will this lower property values in the area?**
- **How will I know that a warning is not a false alarm?**

1.7.8 Question Set 8 (Warning Message Dissemination)

When an actual release of chemical agent vapor occurs during incineration, local emergency officials have very little time to notify the public that will be affected by the release. Local officials must move rapidly to alert the public to provide maximum protection and answer questions to dispel the fears about the threat, including when residents can return to their residences.

QUESTION SET 8

- **Why is there so much uncertainty about how much agent was released?**
- **How can I tell if I am in the plume?**
- **Is there anyway to recognize that a person has been exposed?**
- **If I am exposed what should I do?**
- **Will the agent wash off?**
- **Is there enough time to evacuate?**
- **What is the best way to protect myself?**
- **What can be done to protect school children?**
- **How will my pets be affected?**
- **What are the long term effects of exposure?**
- **When will it be safe to enter an area after an accident?**
- **Why can't we be told of a release sooner?**
- **Why can't the release be better predicted?**

1.8 FRAMING OF ISSUES

When the questions are examined, one can note the way the issues are framed. What are the different types of events that trigger questions about risks? What types of information are required to give out risk communication messages? What types of sources or input is needed to ensure accuracy? One can also ask whether the questions involve a "need-to-know," a "right-to-know," or a "want-to-know," and whether it makes a difference in the risk communication effort.

In the first question set, assessment of risk was defined as an agency problem, whereas the second and third incidents were defined by public or media sources as public problems. A general theme throughout the situations is that all questions assume risk assessment and management as part of the problem in the risk communication process. The assumption of management of part of the communication process compounds the uncertainty about how to define the risk involved. All questions discuss the problem as a process, but define issues as agency problems in which the risk must be communicated to the public—that is, one-way communication or monologue, not an interactive dialogue. Dialogue occurs when the discussion involves active participation on both sides. Demanding closure on problems appears to be one of the key elements affecting the unwanted but very real environmental risk communication problems. Yet every day humans adjust to changes in the environment without demanding risks go away or be reduced to zero. Still the assumption persists that the public demands zero-risk solutions as ultimate resolutions of risk management strategies.

1.9 ORGANIZATION OF DOCUMENT

This document is organized as follows. The first chapter describes the CSDP and the CSEPP, and reports some of the problems that have surfaced regarding communication of risks of the chemical weapons to the public. Typical sets of questions are presented that focus on the various complexities regarding risk communications for the CSEPP.

The second chapter describes risk definitions and concepts behind risk and risk communications. Cross cutting themes across the literature are discussed. Chapter three looks at different approaches to the study of risk communications.

The fourth chapter discusses basic issues raised . Chapter five then reviews various components of the risk communication process identified by experts and others in the field of risk communication. Chapter six reviews strategies for developing risk communication programs and some recommended practices. Since each CSEPP location will have problems specific to their communities in dealing with the risks involved, no specific strategy is advocated.

The final chapter reviews the conclusions and how the findings can help in the search for better risk communication methods for the CSEPP. The questions are again discussed as to the findings and their relevance to the risk communication process within the CSEPP as well as to other non-emergency risk communication settings.

2. RISK AND RISK COMMUNICATION

2.1 INTRODUCTION

The most effective risk communication involves interaction. A comprehensive view of risk communication states:

> **"Risk communication is the interactive exchange of information and evaluative principles pertaining to the assessment and management of environmental and health risk among researchers and technical experts, industry, government regulators and agencies, interest groups, and individual members and groups of the general public."**
> **(Adapted from Leiss 1987; National Research Council 1989)**

Providing information about risks from hazardous chemical agents in the continental United State's aging weapon stockpile to individuals and groups may seem simple in theory but is difficult in practice. Risk communication techniques for the CSEPP may differ from those strategies used successfully by emergency managers for other hazards or emergencies because of the public's dread and unfamiliarity with chemical agents and their effects. Furthermore, most of the literature in risk communications deals with public acceptance of hazardous facilities and not with preparedness issues from an existing but poorly defined hazard. Improved assessment and communication strategies are needed in the CSEPP because the ground rules associated with assessing the impacts are uncertain and the various public's trust in Army procedures is shaky. For non-technically oriented risk communicators it is difficult, but not impossible, to learn to separate the expert or technical analysis inherent in the final risk assessment while remaining unbiased in distributing that information to the publics affected.

2.2 RISK CONCEPTS

In 1989, the National Research Council (NRC) initiated a study designed to offer knowledge-based advice about the process of risk communication to agencies, industry, and individuals. The committee concluded that many of the participants involved in the process lacked understanding of the terms and concepts used in risk communication, especially between hazards and risk and between risk communication and the risk message. In an attempt to facilitate understanding of risk elements, the NRC categorized the terms as follows:

• Hazard: An act or phenomenon posing potential harm to some person, group or thing; the magnitude of the hazard depending on the amount of resulting harm, including the seriousness and the number of people affected.

• Risk: Adds to the hazard and its magnitude the probability that the potential harm or undesirable consequence will be realized.

• Risk assessment: The characterization of potential adverse effects of exposures to hazards; includes estimates of risk and of uncertainties in measurements, analytical techniques, and interpretive models; quantitative risk assessment characterizes the risk in numerical representations.

• Risk control assessment: Characterization of alternative interventions to reduce or eliminate the hazard and/or unwanted consequences; methods to control risks consider technological feasibility, costs and benefits, legal requirements and/or restrictions.

• Risk management: The evaluation of alternative risk control actions, selection among them and their implementation; the responsible person or agency sometimes oversees the preparation of risk assessments, risk control assessments, and risk messages. Risk management may or may not be open to outside individuals or organizations.

• Risk communication: An interactive process of exchange of information and opinion among individuals, groups, and institutions; often communications involve multiple messages about the nature of the risk(s) or expresses concerns, opinions, or reactions to risk messages or to legal and institutional entities or organizations for risk management.

• Risk message: A written, verbal, or visual statement containing information about risk; the message may or may not include advice about risk reduction; a formal risk message is a structured written, audio, or visual package developed with the express purpose of presenting information about a risk.

• Risk communication/message source: The individual or office sending a risk message or interacting with other individuals, groups, or organizations in risk communication process; the source may also be the risk manager, the risk message preparer, the risk analyst, or some other expert.

• Audience/recipients: The recipient(s) of a risk message; almost never a homogenous group; an audience may include recipients intended by the preparer of the message as well as others who receive it even though the message was directed elsewhere. (Adapted from NRC 1989)

2.2.1 Hazard

Because risk communications cross disciplinary boundaries, definitions of a hazard and the risks are associated with the hazard vary among groups as well as between experts depending on their orientation and past experience. A broader definition of hazard than that proposed by the NRC is offered by Kates (1978) who states:

> **"A hazard is the threat potential posed to humans or nature by events originating in or transmitted by the natural or built environment."**

The definition implies that a hazard affects not only people, but the physical environment.

Most risk assessment methods focus on the effects from a single hazard with specialists trained in that area performing the risk analysis. Regardless of the method chosen, the intensity and location of the hazard must first be defined. Most methods used to characterize the degree of hazard use a probability statement to describe the likelihood or frequency of an occurrence of the hazard. The probability distributions for relatively frequent events are usually based on historical data. When data do not exist for very rare events or when plans are being prepared for the possibility of a future event occurring, probabilities can be estimated using models which simulate (i.e., approximate) the physical mechanism of the hazard. When conducted for a relatively large area, the level of hazard will vary with location and that variation can also be calculated. Models have been used to approximate accident scenarios in the CSEPP because the expected probability of a chemical agent release is extremely rare and only limited historical data exists.

The type and intensity of hazards will vary depending on the scale of analysis. For example, on a regional basis earthquakes and landslides are major problems in California but hurricanes and floods present more risks overall to residents in Florida. The likely intensity of a hazard can also vary depending on scale. The intensity of a storm (and the consequent damages) in Florida often depends on how close a structure is to the ocean. For the CSEPP, however, a regional spatial analysis was not deemed necessary because the intensity and scope of the hazard of a chemical agent release would be confined to a relatively small area near the storage site.

The degree of risk is related both to the hazard's probability and the magnitude of consequences (Whyte and Burton 1980). Because an event with the potential for disastrous results occurs does not mean that it is necessarily hazardous. Natural hazards are viewed as products of the interaction of the natural environment and society, with individuals and governments able to increase or decrease the degree of risk associated with a hazard (Burby

et al. 1991). For example, keeping residences out of floodways reduces the risk from flooding. This does not imply that the mitigation efforts directed toward hazards is equally distributed among risk bearers or that governments will be efficient in dealing with hazards. The daily monitoring for chemical leaks in the munitions stockpiles permits the Army to effectively contain minor leaks and lessen the hazard.

2.2.2 Risk Definition

The term "risk" has been used in the literature to mean either the probability of danger or the hazard itself (Whyte and Burton 1980). The concept of risk implies the possibility of suffering from a loss but the size and occurrence of that loss is uncertain. It is that uncertainty which is central to the notion of risk (Burby et al. 1991). Dealing with that uncertainty is one of the primary technical issues in assessing risks in the CSEPP. No loss estimation prepared, however, can ever be completely accurate (or predictive) because of the underlying uncertainty.

Generalizations drawn from results of early psychological studies concluded that perceived risk was quantifiable and predictable but that "risk" meant different things to various people. While we are not directly concerned with analyzing how individuals perceive risks, it is necessary to understand that factual information provided by experts and agencies contains undefined assumptions and values that experts as individuals hold. How they assess risks will differ because those frameworks influence the discussions about risks. By making those assumptions clear, one can better understand why differences exist.

Critical differences between experts and the public raise the issue of who should make or evaluate risk estimates, especially when new risks emerge or benefits from a new technology are not immediately known. For some the issue bears on who are the actual "risk-bearers." Another issue arises when risk assessors and risk managers try to communicate that they and members of the public share a common heritage. The "commonality assumption"—that experts share common and cultural heritage in the domain of risk with lay persons—has proven false (Slovic 1986, 1991). Risk is brewed from an equal dose of two ingredients—probabilities and consequences—but most of the attention from experts centers on probabilities (Slovic 1986) or the probability of loss or injury (Rodgers 1989). Conversely, lay persons concentrate on consequences. Although they are not mutually exclusive, problems can arise over the inferences given the underlying assumptions.

Although experts judge risks close to technical (generally the probability) estimates of annual fatalities, lay people assessments are usually more sensitive to other characteristics, "especially for hazards whose adverse effects are uncontrollable, dreaded, catastrophic, fatal rather than injurious, not offset by compensating benefits, and delayed in time so the risks are borne by future generations" (Slovic 1986, 1991). Slovic's studies indicate that those characteristics are amenable to being condensed into a small set of factors for quantifying risk estimates. Factor 1, *dread risk*, is defined as perceived lack of control, dread, catastrophic potential, fatal consequences, and the unequitable distribution of risks and benefits from a hazard. Factor 2, *unknown risk*, is defined as those hazards judged unobservable, unknown, new, and delayed in manifesting harm. Another consistent result of studies on risk indicates that non-voluntary risks (and risks that are imposed) are usually regarded as more undesirable than voluntary risks (Hansson 1989).

An individual's qualitative assessments of the probability of risks can also be affected by the level of uncertainty as expressed by experts' opinions of potential effects. Thus descriptions by scientists that a substance is "known" to have possible cancer threats is judged more threatening than a substance labeled as having "possible" causes (Graham 1989).

The qualitative and quantitative dimensions of risks also account for the differences in methods used for risk analysis. Thus definitions of risk differ not only between experts and members of the public, but also can exist between experts themselves. The traditional scientific (quantitative) basis for risk is based on the probability of an event times the consequence of an adverse or hazardous event, given a population exposed to a hazard, occurring over certain time period. (See Figure 2-1) However, most members of the public perceive risks in more comprehensive manner that injects both social and normative characteristics

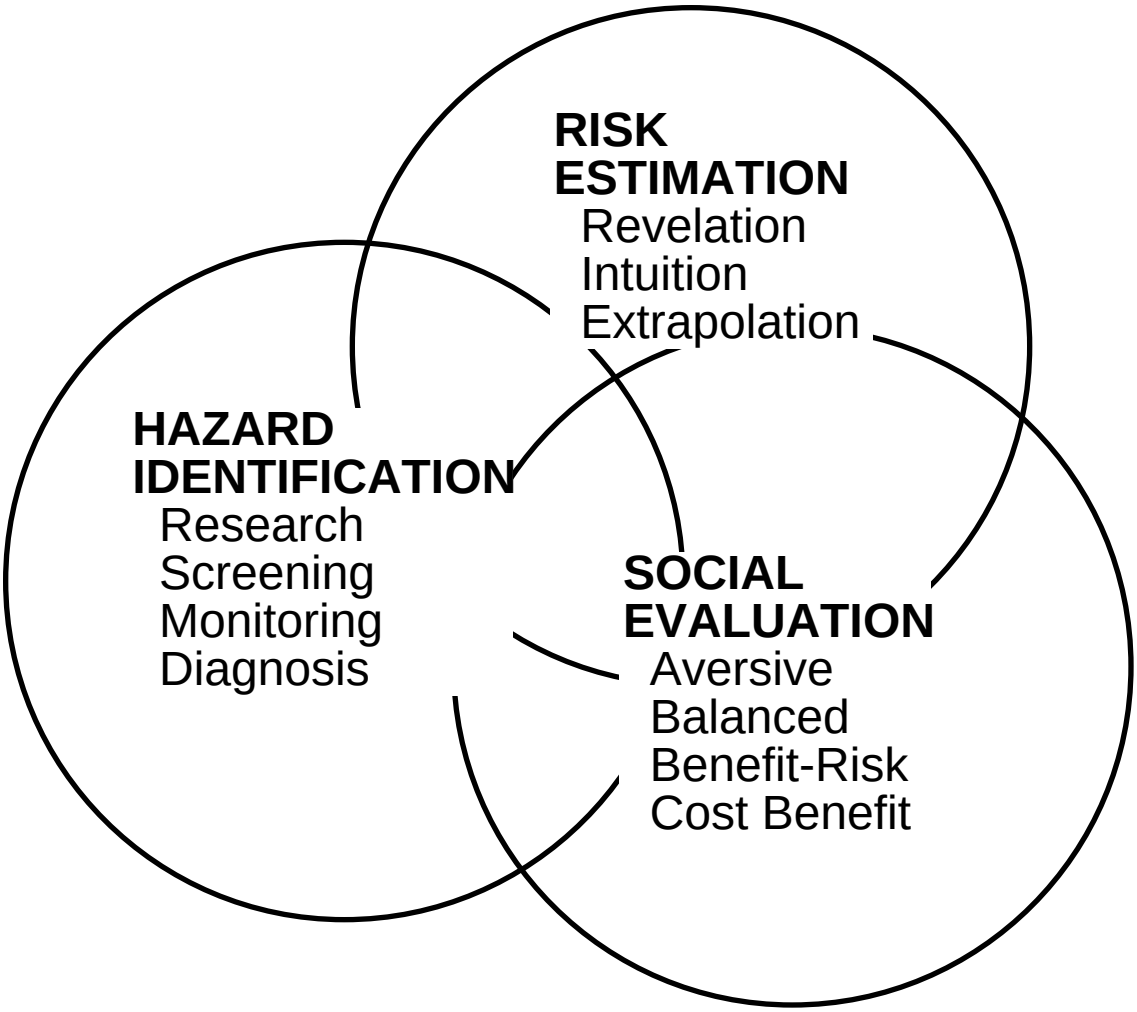

Figure 2-1 Elements of Risk Assessment. (Adapted from Kates 1978)

(the qualitative value dimensions) into a risk assessment. On occasion, the differences have led to the public's distrust of scientific evidence for not taking into consideration "all the facts." In the CSEPP this distrust is evident in the disagreement over what constitutes a credible worst-case accident.

Some researchers have suggested the distrust of scientific risk assessments may be from the use of the *de minimis* principle by regulatory agencies. In the late 1970's, regulators adopted policies for designating certain risk levels as too low to merit regulation by their agencies. The *de minimis* concept stems from the common law practice of relegating certain actions as not worthy of the court's oversight—"the law does not concern itself with trifles" (Jasanoff 1991). Regulatory agencies welcomed the opportunity to use the *de minimis* concept for risks that fell below a certain threshold level because it

provided a scientific (and legal) basis for decision making. Since then the trend toward increased reliance on quantitative measures derived from improved analytical techniques has moved analyses of risks further away from qualitative judgments while reinforcing the development of *de minimis* risk assessment. Critics assert that a policy that permits certain cases to be dismissed immediately fails to allow for incremental or cumulative risk assessment or for hazards that interact synergistically and which need to be analyzed systematically with other hazards. Although efficient, the policy may not be equitable because it does not permit the distributive aspects on risk bearers to be addressed (Jasanoff 1991). Thus groups that may be more sensitive to some hazards (e.g., the young, those with prior physical impairments, or those living in already disadvantaged areas with substandard housing) are not accounted for in *de minimis* policies. Thus critics claim a *de minimis* policy provides a "license to harm" at low levels. Emergency plans for the CSEPP try to overcome some inequities by determining what types of structures or susceptible populations are in the area when decisions are made to shelter in place or evacuate.

The insurance industry draws an important distinction between two types of risks: particular risks and fundamental risks (Burby et. al. 1991). Particular risks are those wholly independent events that affect individuals or small groups (e.g., a death, a residential fire, or a property theft). Although large numbers of people are affected by these risks, the consequences are limited and independent from other events. An event that affects a large number of people and has large catastrophic potential is called a fundamental risk (e.g., hurricanes, earthquakes). Insuring fundamental risks is usually deferred to the public sector because writing coverage for catastrophic events could bankrupt a private company.

2.2.3 Risk Identification

Originally humans identified risks through their direct experience with the hazards and their consequences and conveyed that information to their groups and colleagues; mitigation efforts may have been real or imagined. Over the last 100 years, the task of identifying risks and their consequences became relegated to experts and institutions that used technically sophisticated methods (such as screening, monitoring, and diagnosis) to identify risks to different population groups. Overall there appears to be little conscious effort to integrate scientific techniques between disciplines, and the selection of methods to identify risks remains a matter of disciplinary style of analysis.

Risks are identified by experts, industry, or agencies and the information given to the public, or the risks can be discerned from a public complaint and result in discovery

and/or validation of the risk by expert sources. The resulting knowledge is diffused among experts and peers, discussed, and evaluated. Discussions then take place on the management of the risk and include various parties and individuals directly or indirectly involved—often with differing agendas, assumptions, opinions, options, and time frames. Generally, the risk issue, including the assessment and management analysis, then moves into the political sphere to be managed by regulatory agencies or institutions designated to alleviate the risk(s) identified. However, the erosion of public trust in institutions and agencies whose mission is to handle risks has forced more openness among some agencies to interact with the public prior to any regulatory action. In the CSEPP, some information that the Army has about the amount of chemical munitions stored has remained unavailable to the public because it was classified internally as pertaining to national security—a policy which undermined the public's perception of an Army's credibility.

Another issue associated with identification is that some naturally occurring hazards and their related risks may not be detected until consequences are too great to permit management. Risks are not always easy to recognize, especially if the technology is new and untested. Outcries from the public over the hazard potential of biotechnology or genetic engineering are related to the fear about the unknown consequences of such technologies. Sometimes identification of risks occurs long after severe adverse consequences have occurred. Prolonged drought or long-term deforestation resulting in heavy erosion leading to increased risks from flooding are examples of such cumulative hazardous consequences.

Some people have difficulty understanding how risks are estimated. The collective versus the individual interpretation of risk can differ between and among groups as well as between societies. To individuals of the general public, risk implies that not everyone is involved. But statistical probability is typically based on each member of the collectivity (e.g., groups or subgroups within society), having an equal opportunity of being at risk if engaged in a similar behavior or event. Thus risks to male drivers between the ages of 15 and 25 are calculated on all male drivers between those ages.

Other issues involving hazards are never brought to the forefront of public agenda to be identified as risks. Kasperson and Kasperson (1991) have referred to "hidden hazards" as needing to be identified as part of the public agenda. The increased health risks to infants due to poor prenatal care is often attributed to the pregnant woman's lack of concern (an individual problem), when in reality poverty (a societal problem) prevents many marginal groups from participating in risk prevention measures (e.g., adequate nutrition during pregnancy). Thus associated with risk identification is the problem of

equity or distribution of risks among groups, and identifying (and supporting) the overall costs and benefits associated with certain risk prevention strategies.

2.2.4 Symbolism Versus Realism

The concept of risk has both symbolic and realistic implications. To an individual, risk can suggest danger, warning of a hazard, or a precursorto potential future threat or harm. Knowing that one can "take a risk" also symbolizes a chance or hope, even though a gamble, depending on the probability of the outcome. Playing a lottery means taking the risk of losing a small amount of cash for the chance of winning a great deal of money.

Moreover, risk perception varies with an individual's own level of understanding and education about the hazard, one's belief in the credibility of the source of the risk information, and the awareness and relevancy of the hazard potential to the person. Also involved are the existing situational factors and the context in which the risks are perceived as well as the individual physiological factors associated with the expected trauma from the risks. Deciding what level of risk is acceptable is not just a technical question but a value laden choice for an individual (Covello et al. 1988).

2.2.5 Acceptability of Risk

Critics argue that "acceptable risk" is different from the "acceptability of risk." The distinction hinges on the technical definition of acceptable risk that defines certain levels of substances as not hazardous to human health or welfare. A major difficulty in judging the acceptability of risks is that the evidence is based on probabilistic reasoning about the effects caused by various substances and practices (Mayo and Hollander 1991). For example, EPA's Clean Air Act (1970, 1977, 1990) regulations require emissions of certain substances to be less than so many parts per billion regardless of the specific population affected. Because science is so important in determining the acceptability of risks, it's not surprising that disagreements exist about the validity of the assessments of risks.

What factors should be considered or given priority in the assessment of the risks is a major issue in risk communications. Some argue that as a concept risk must accept normative judgments. The level of risk is only one variable among several that determines acceptability—deciding what level of risk ought to be acceptable is not a technical question but a value question (Covello et al. 1988b).

The controversy exists not only between individual members or segments of the public and expert groups but between expert groups themselves. The assessment issue has grown in response to the mandates of the environmental pressures generated during the

1970s and mandated by Title III of SARA, (Superfund Amendments and Reauthorization Act) and the more recent OSHA standards. No longer can government agencies dictate levels of acceptability in the decisions about environmental risks.

The basic issue in defining acceptable risk is over control—who can or should define the level of acceptable risk or tolerable risk. For agency managers charged with protecting the public and familiar with the regulations, public concerns over acceptable risks are often the most thorny issues in discussions of risks with the public. Some agency managers claim the public unjustifiably assumes a "zero-risk" mentality when approaching risk decisions. The assumption projects the public is incapable of making rational decisions because of the host of external factors that cloud the technically derived risk estimates.

While a high level of risk may be tolerated as acceptable by an individual risk-taker, other risks that involve a number of persons may be considered unacceptable; strict safety guidelines have been introduced to ensure the minimization of those risks. Safety experts are constantly issuing reminders that seat belts have been shown to save lives of those in automobile accidents. Individuals, however, voluntarily engage in risk provoking activities (not wearing seat belts when driving) knowing that harm may occur (or occur again if the activity is repeated).

As pointed out previously, risk is generally more acceptable to people if it is voluntary, exhibits some social control, is beneficial, occurs in the short-term, and is distributed fairly (e.g., presumed equitable among all risk-bearers). Conversely, risk is viewed as unacceptable if it is involuntary, uncontrollable, and unfair. People often get very upset about preparing for the risks of a chemical munitions accident because they have had little, if any, input on how the weapons were stored in the first place and now, how the munitions will be destroyed. Acknowledging the risks from a hazard without offering any form of negotiation except in the political arena is a problem often faced by CSEPP personnel in dealing with the public.

Another underlying issue involves how much information on risks should be given to the public and when it should be presented in the public decision-making process. The democratic view suggests giving the public all information as soon as available. Others cite the public's usual indifference and apathy to risks for and argue for providing only limited, factual and pertinent information as needed for decision making.

Further contradictions abound between industrial estimates and those of the public, including risk-bearers, about acceptable risks. The issue results in frustrations for both parties. Baram (1986: 568) notes:

"What chemical firms are finding is that risk assessment is fraught with difficulty since it is an art form not reduced to generic practice or confident results; that technical uncertainty prevails; that public values and attitudes about risk are shaped without apparent regard for probabilistic risk estimates by industry or experts; and that there is no "stopping point" at which a firm can determine with confidence that enough assessment and control measures have been undertaken."

When firms try cooperating with local officials in communicating risks at their facilities, they encounter the further difficulty with local government officials who often lack the necessary skills, authority, or resources (including time, money and staff), to develop, test, and manage emergency response systems. And members of the public may be somewhat apathetic, keeping resources limited until a problem actually surfaces.

2.2.6 Risk Assessment Versus Risk Management

Confusion also occurs between risk assessment and risk management strategies. Risk assessment involves three basic elements:

- **hazard identification,**
- **risk estimation or analysis, and**
- **social evaluation**

(adapted from Kates 1978).

Some critics have argued that the separation between assessment and management should be challenged because it presupposes a view that risk assessment is a matter of objective, impartial, empirically oriented fact finding while viewing risk management as vested with social values, subjective, and emotional feelings (Mayo 1991).

Hazard identification methods—the methods used to screen, monitor, and diagnose—are used to determine what constitutes the threat. While the distinctions among methods may appear hazy, conventional usage indicates that screening is the process of hazard identification wherein a standard procedure is applied to categorize products, processes, phenomena, or persons for their hazard potential. Monitoring is the recurrent process of observing, recording, and analyzing those observations for potential hazardous consequences. While screening may involve simply a searching mechanism, monitoring almost always indicates that something is suspect. Diagnosis is the assessment of the

symptoms or consequences in relation to possible causes and usually requires some knowledge of the consequences, but where and how the risks from the threat occurs exactly may be in doubt (Kates 1978).

Risk estimation is the measurement of the threat in terms of timing and consequences, sometimes referred to as the magnitude or the dimensions of the threat. While both identification and estimation of risks are fairy straight forward analyses, social evaluation is more problematic. Social evaluation is the meaning attributed to the measurement of the threat potential and involves answers to questions that use methods of comparison such as benefit-cost analysis and aversion factors. Elements of risk assessment are shown in Figure 2-1.

Risk analyses often model the impacts of an unfortunate event (e.g., an accident, a discovery of pollution, product tampering) in terms of direct harm (mortality), injuries (morbidity), and damages (Slovic 1991). While early analyses of risks often equated the magnitude of the hazard's impact with the number of deaths or injuries, we now recognize that characteristics of an event can extend far beyond the initial analysis. Such secondary impacts may implicate other groups and include significant indirect costs that occur later in time or with unexpected frequency. For example, the Three Mile Island (TMI) accident did not result in any injuries or deaths but had significant impact overall on the public's trust in the nuclear power industry, resulting in a general societal distrust of the nuclear industry at large. In a similar manner distrust of the Army's information system is usually brought to fore in discussions with reference to the Dugway sheep kill incident. Such incidents are not easily forgotten either by the media or the public.

2.3 RISK ASSESSMENT

Accurate risk assessments are difficult at even the simplest level. A risk assessment must contain two distinct parts—measurement and evaluation. Risk assessment recognizes the hazard, appraises the measurement of the associated threat, and displays understanding of the social implications of such measurements (Kates 1978). Although complex, risk assessment is part of everyday life. For example, deciding how fast to drive or even what foods to eat or drink—healthy versus fatty—involves a choice (conscious or unconscious) about the risks we want to take regarding our health.

On a different level are those risk assessments based only on statistical comparisons. Actuarial tables used as a basis for calculating rates by insurers are based on historical data collected for certain groups. Some common classifications are age, gender, and race. Risks associated with various groups are compared and then fee schedules are

developed that reflect the risk level of that group. The results may not seem equitable. Women may pay lower rates for some health insurance coverage and male drivers under 25 may be subject to higher automobile premiums. Although it is probably important for us to try to control factors that statistically decrease the probability of an accident or early death, risk can never be eliminated from daily living.

The mere presence of a known hazardous substance in the environment, however, does not automatically lead to an increased health risk. For example, chlorine in certain amounts is considered a hazardous substance but chlorine in public water supplies is a benign, even beneficial chemical. Based on statistical analysis, it is many times more "risky" to refuse to wear a seat belt when driving than to live near the Diablo Canyon Nuclear Power Plant while the statistical risks of a high-fat diet lie somewhere in between (Wilkins 1987). Making such comparisons, however, is not always a good communication strategy (Covello et al. 1988).

2.3.1 Macro Versus the Micro Perspective

It is ironic that the macro perspective toward risk assessment taken by most experts and regulatory agencies in determining risk thresholds may fail to encompass the broadest view by reflecting only statistical measures. Statistics are used to extrapolate results to larger populations, regardless of the characteristics of individuals. Critics point out that the public often takes a more comprehensive framing approach toward risks than agencies by incorporating the qualitative aspects of social values and of one's cultural heritage (Cvetkovich and Keren No date). It is important to know if perceptions of risk among groups differ because of lack of knowledge about the risks or for some other reason, such as variations in cultural backgrounds. Plough and Krimsky (1987) point out that cultural rationality does not deny the role of technical reasoning, but extends the technical analysis perspective by refusing to separate risk assessment from its social setting or context. The dominant model of traditional (scientific) risk assessment methods thus may overlook the complexity of cultural factors inherent in a comprehensive risk analysis.

Other critics have argued that social scientists have abetted the concern among public officials of an 'irrational' public by foisting simplistic names on complex social processes (Kasperson and Kasperson 1991). For example, referring to a LULU (Locally Unwanted Land Use) or to a NIMBY (Not In My Back Yard) syndrome serves only to discredit the reaction of a public expressing rational concerns about risks. Using such acronyms to criticize local activism toward a project may only enhance the image that

institutions, such as the military or the federal government, are uncaring monolithic structures.

2.3.2 Hazard Versus Outrage

The traditional method for measuring risks to a population relies on mortality statistics to set standards. Statistics are generated by determining by the number of deaths per cohort (a group of people in a certain age range or other category) over time. Sandman (1988: 163) argues the 'concept of risk' means a lot more than mortality statistics. Essentially there are two independent variables involved in the concept of risk assessment, the social and the statistical, neither of which are positively or negatively correlated. Sandman (1988) advocates using one of the classic definitions of risk—how many people are likely to incur how much damage if X event occurs—and calling that the hazard. Hazards are what risk assessments are designed to estimate quantitatively. Everything else that goes into a lay person's risk perceptions Sandman calls the "outrage" factors. "Outrage is everything about risk that's relevant except how likely it is to hurt you," notes Sandman (1988). Sandman's concept, however, does not fully articulate the probabilistic nature of risk events.

2.3.3 Threshold

What constitutes a threshold in assessing risks often confuses people. Technically, a threshold involves both timing and quantity of a substance. A threshold is the point at which a physiological or psychological effect begins to be produced. As Paracelus, the 15th century physician who developed the concept of toxicology, said:

> **"Everything is poison. There is no substance which is not a poison.**
> **The right dose differentiates a poison from a remedy."**

For precision, regulators have added specific values to the concept of threshold. Threshold Limit Value (TLV), Threshold Planning Quantity (TPQ), and Threshold Quantity (TQ) are common terms in agency parlance. The concept of threshold dose is critical because it is often the basis for setting safe exposure limits for certain chemicals. For example, under SARA Title III, whether an industry has to report having certain extremely hazardous substances on site is based on whether the amount stored is in excess of the TPQ.

In the U.S., the EPA is the primary agency involved in risk assessment, but the agency has been criticized for its no threshold, linear multistage assessment model used for regulating substances. Basically, EPA assumes that if any dose of a substance can cause cancer then every higher dose can cause cancer in equal proportion. For example, if 100 parts per million (ppm) of a substance can cause 100 cancers, in theory 1 ppm will cause one cancer (e.g. 100/100 = 1). The model assumes that no safe exposure levels exist for carcinogens.

A carcinogen is technically a substance or agent that produces or incites cancer. The risk of developing cancer from exposure to chemicals in the environment is calculated on statistical data, but the evidence of ever-increasing new information and better technologies for analysis increases the complexity of the task. One earlier assumption for relying on statistical procedures was that scientists could distinguish carcinogens from non-carcinogens and that only a few chemicals or substances could cause cancer. While as many as 2000 substances are classified as "suspect," "probable," or "definite" human carcinogens, only 23 substances have been proven through human epidemiological studies to increase cancer rates. The remaining carcinogenic classifications rest on animal studies that have been extrapolated (projected with inferences) to human populations.

As important as animal tests are for determining carcinogens, critics often attack the studies as providing distorted data for human populations. For example, in one study on decaffeinating agents for coffee, rats were fed the equivalent dose of 12 million cups of coffee a day. Among critics are those from the Harvard Center for Risk Analysis (1993) who argue for testing all chemicals using Bayesian statistical methods to produce a probability distribution on carcinogenic potency that accounts for the amount and quality of scientific information. That way, when new evidence surfaces, the potency distribution can be revised. Critics further argue that regulated industries would also have an incentive to devote more resources explicitly for testing for carcinogens if it would increase the evidence available for the use of certain substances that are presently questioned. There are about 80,000 commercially produced compounds that have possible negative consequences on human health or the environment, but only a fraction have been subjected to actual quantitative and systematic analysis.

Eliminating the large areas of uncertainty due to limited data on dose-response relationships would be helpful to the CSEPP. The limited amount of data on human effects from exposure to mustard and VX has hindered the publishing of certain standards for worker protection in the CSEPP. What data was available had to be tracked down through time-consuming methods that involved going through old classified military documents. The Army is currently working to develop improved toxicity values.

2.3.4 Risk Measurement Issues

Risks associated with new technologies led to the development of techniques that were quantitatively based in order to arrive at "objective" facts on which to base policies (van de Pligt and de Boer 1991). However, how measurements are made is clearly influenced by underlying assumptions, intuitive judgments, or methodologies traditionally utilized as recognized techniques. The large discrepancies involved, however, may push those objective facts into the realm of opinions.

Although measurement is fundamental to scientific activity, each area of science develops its own set of procedures. Such techniques and specialized methods help make sense of the observations about the world around us—people, objects, events, and processes. While statistical measures may be adequate for observable phenomena, the measuring of intangible social phenomena (such as stress) is not as easily calculated because the relationships between concepts and that which is measured may not be easily recognized. When an observation is difficult to validate, direct inquiries on a quantitative or empirical basis can help sort things out initially. For example, counting the number of automobile deaths in accidents with people not wearing seat belts versus those where seat belts were worn may give clues as to whether seat belt use (a behavior) leads to decreased mortality rates from car accidents (a statistic). Likewise, if only a poor measurement is available, the costs of using that measurement may be greater than the benefits gained, because certain factors may be overlooked that bear directly on the level of risk involved. By using a variety of expert opinions, the uncertainty of measurement about the risks can be made more explicit. For example, when officials say that storage of weapons is safe because an accident has never occurred, some members of the public do not accept the premise that sole reliance on historical data (no accidents) is an adequate method on which to base risk assessment.

The tension between views on risks challenges traditional political responsibility, including regulatory actions, for risk management. Some studies attribute this tension to the rise of environmental advocacy in the early 1970s (Plough and Krimsky 1987) when concern arose about governmental indifference to environmental degradation. Thus the divergence between experts and the public over risk is not caused by ignorance but by differing values of persons involved in judging risks (Renn 1989).

Covello et al. (1989) argue that the roots of most risk communication problems lie in the complexities and uncertainties of the risk problem itself. Communication problems can often be viewed beneficially as decision problems. Whereas federal or state regulatory

agencies view risks from a societal or macro perspective, citizens follow a micro perspective and more personal approach that often employs a longer time frame. Thus the micro perspective encompasses more than probability estimates and places the risk in the social context (Plough and Krimsky 1987).

Developing a consensus on how risk assessment can be achieved between risk perpetrators and those persons at risk in an equitable fashion has been a continuing issue. Some suggest decisions should be based on economic models of rationality—asking whether the hazard from an identifiable source(s) to a small number of people is justification enough to give the problem high priority and a generous share of resources (Allen 1987). If the risk debate is framed in these terms and the value judgment is yes, then that judgment should carry great weight in the decision-making process. If the judgment is no, then other changes may be in order. If dimension of risk is high, and experts say the probability is low, then one should develop full understanding of the outrage factors and the hazard probabilities, and frame the issue in terms of competing resources (Sandman 1978).

Hattis (1989) suggests choices on allocating efforts to risk assessment be judged on whether analytic efforts can in fact reduce uncertainty (the technical aspect) and on the relative importance of reducing specific uncertainty. The general criteria the analyst should apply would be analysis of those aspects relevant for foreseeable decisions the intended audience might wish to make based on risk information.

2.3.5 Risk Communication Versus Risk Management

Risk communications often do not clarify the distinctions between risk communications, risk assessments, and risk management strategies. Complaints about faulty risk communication efforts frequently confuse the lack of communication about risks with the inability to assess risks or the frustrations involved in managing hazards. Although risk assessment strategies often address the ability (or inability) of experts to control risks, most risk communicators view their communication roles as advisers or moderators in the decision-making process.

In the extended process of identifying and assessing a hazard, some risks are not communicated to the public until after the hazard has occurred or people are already at risk. Sometimes risk generators are also risk communicators, which can provoke distrust and even anger at communication efforts. Moreover, many risk communication efforts in the past were in conjunction with the siting of hazardous waste or nuclear power plant facilities. The co-opting strategies that industries used to facilitate the process were often held in contempt by the publics involved. In the Army's case with the chemical weapons,

the present officials are dealing with a hazard generated long ago. Because of the shroud of secrecy, very little technical work or openness in the scientific community occurred on the impacts from chemical agents prior to Congress's disposal mandate. Thus the program has had to wait until the technical analyses (and identification) was in place to accurately convey the risks from the chemical agents, even while stored. Another emerging issue is the gap between each installation's assessment of the potential accidents and those found in the Army's formal risk analysis. The accident data base from the formal analysis is very different from the types of events that the installations have historically considered credible events. This difference occurs because the formal risk analysis was conducted to define all possible accidents for making a programmatic decision while the credible events are those the installations consider likely based on experience and regulatory requirements.

2.4 RISK MANAGEMENT

> **William Ruckelshaus (1985) broadly defined risk management as:**
>
> **"the distribution of current resources to shape some desirable future state; risk management in its broadest sense means adjusting our environmental policies to obtain an array of social goods— environmental, health-related, social, economic, psychological—that forms our vision of how we want the world to be."**

One aspect that Ruckelshaus did not address is that the amount of resources expended affects the time and effort directed toward establishing the level of risks as well as toward the reduction or mitigation of risks. Another problem is that there is little or no public consensus or trust that government can conduct the social management of risk in a fair and equitable manner.

After decision makers have identified paths of exposure to risk, the risk management process proceeds to analyzing the range of tasks and management control actions available (Burby 1991). Major areas of management control involving environmental hazards are research and monitoring and the drafting of legislation and regulations; standard setting; inspection and enforcement; and review of risk levels (Whyte and Burton 1980). The evaluation and selection of alternative risk control measures, and their implementation, may or may not be open to outside individuals or organizations. Resources (money, skills, and time) are required to manage risks and are often directly

associated with the costs, delays, and inaction in decisions on managing risks (Whyte and Burton 1980).

Events themselves may not allow for orderly procedures of risk management. It is important that when an emergency of rapid onset occurs that risk managers can suspend formal decision-making operations and protocols and function in a response mode that communicates to the public the agency's concern, ability, and accountability in a crisis involving risks. Successful risk management depends on an agency's accountability and ability to hold up under scrutiny, and the more officials can be trusted to perform their roles, the better able they will be able to continue to manage future risks effectively—in or out of a crisis. Although the past 25 years have seen remarkable progress in our understanding of hazards and in mitigating their threats, it has only been within the past decade that we have begun to understand the difficulty in communicating information about the risks from a hazard to the public.

2.5 MODEL OF RATIONALITY

The rational model assumes that members of the public will accept the directive of technical experts and scientists when given the facts. In concept, an informed public will follow a rational course (advice) as outlined by experts. The flow of information is unidimensional (one direction) from experts to the lay publics.

Needleman (1987) notes that the successive emergence of three risk concepts—assessment, management and communication—acknowledges that the field of risk analysis is inherently political. The models used in risk assessment and risk management tend to make simplifying assumptions about risk related behavior for the purposes of analysis. The models assume rational actions by autonomous, competent individuals with full access to information and data that results in clear, permanent choices. Individuals at risk, however, live in a world where these assumptions may not be valid and who are thus blocked from constructive decision making unless support services, counseling and advocacy are provided along with factual data about risk itself. Needleman (1987) states:

> **"The sponsors of programs for transferring risk information to the public must go beyond assembling and disseminating the same kind of data used for risk analysis and risk management. They must incorporate a series of a serious affirmative value commitments to assessing and serving the target population's need for practical, personally applicable information."**

The model of rationality assumes that the public needs to be taught to accept the uncertainties of science and to understand the concept of relative risk and the methods

used to predict risk. The public must receive, understand, believe, agree, and act accordingly in order for persuasion to work. Regardless of the purpose, messages must be developed with consideration of the desired outcome (Arkin 1989). Says Thomas (1987):

> **"The ultimate goal is to increase public cognizance of the fact that priorities must be set if any real progress is to be made in dealing with environmental risks, and to gain public acceptance of an ordered and rational program to control the most significant risk. Citizens must share directly in the decisions that affect them, and we must ensure that they do so with a fuller understanding of the inevitable trade-offs involved in the management of risks."**

The risk communication decision is itself a decision problem separate from the risk problem and its analysis. The public should know and appreciate that there are no zero-risk solutions, that tradeoffs are necessary, and that uncertainty about risk outcomes cannot be avoided, note Keeney and vonWinterfeldt (1986). To assume that social context is all, and there is no objective knowledge that should be communicated, is as inaccurate as assuming that only technical data is salient (Jasanoff 1988).

Communicators must develop mechanisms to deal not only with scientific data but also with competing needs and values and should not expect to resolve controversial issues with technical expertise alone (Chess and Hance 1989). The similarities should be stressed between risk assessments and other issues that the social decision-making process must handle (Hansson 1989). The summary of results of analysis should allow the diverse members of audience to apply their own value standards to make as informed choice as possible. This involves communicating uncertainties of information and/or reasonable likely worst case scenario (Hattis 1989). Despite its intellectual and practical challenges, the middle way which respects the roles of both technical and contextual information in risk communication seems the most fruitful (Jasanoff 1988). States Slovic:

"To be effective, risk communicators must recognize and overcome the limitation of scientific risk assessment and idiosyncrasies of the human mind. That is, just as they must understand the strengths and limitations of risk assessment, communicators must appreciate the wisdom and folly of public attitudes and perceptions." (1986)

3. ALTERNATIVE PERSPECTIVES ON RISK COMMUNICATION

3.1 INTRODUCTION

Risk communication will and should mean a variety of things to different groups and people with alternative frames of reference. In part this is due to the vastly different subject areas that fall under the umbrella of risk communications. Some subject areas have similarities while others are somewhat disparate. For example, in health related areas one can see that there may be some implications or lessons to be learned from EPA's experience with toxic substances for the CSEPP. On the other hand, the link between experience with genetic counseling regarding birth defects and the CSEPP is more tenuous.

Risk communication provides disclosure, but how or what is disclosed about a risk raises disagreements between experts, publics, risk bearers, risk generators, and other interested or associated parties or individuals. Risk disclosure presumes both ethical and legal implications for the individual's or community's right to know. Baram (1986) points out that right-to-know policies are based on three assumptions:

- **those who possess information which can enable another to avoid harmful consequence have a duty to disclose the knowledge in a timely fashion;**
- **that risk management is a joint enterprise between risk generators and persons at risk;**
- **that risk communication informs the public, thereby promoting agency accountability.**

Experts often disagree about how much disclosure about risk is needed for either assessment or management of a risk. Hilgartner and Nelkin suggest the disparity between expert opinions is unavoidable:

> **"When broad statements, such as risk communication should avoid undue harm or should never withhold necessary information, are applied to actual situations, conflict is inevitable because groups approach risk communication with different economic and professional interests and competing political and ideological concerns." (1987).**

This observation suggests that risk communication faces an obstacle from the onset of a program—the content of risk communication is almost always destined to cause problems for some affected party.

Examining various definitions helps define the broad spectrum of approaches to the risk communication process. Kasperson and Palmlund (1987) argue that risk communication enters our lives in a multiple of forms with any information gleaned (or omitted) from any source a possible form of risk communication. Intentionality is often assumed in risk communication efforts. Thus risk communication can refer to any public or private communication informing individuals about the existence, nature, form, severity, or acceptability of risks (Plough and Krimsky, 1987). Covello et al. (1989) argue for limiting risk communication to "any purposeful exchange of scientific information between interested parties regarding health or environmental risks."

Plough and Krimsky (1987) list five major components of risk communication: intentionality, content, audience directed, source, and flow. The aspect of transferring information about risk to a presumed "reactive" (or passive) public influences methods of communication. Chess and Hance (1989) hold that risk communication should be part of a problem-solving methodology and not a way to avoid solving problems.

Effective communication results from commitment of communicator and of audience participants. Effective risk communication demands (1) a guarantee of agency's resources and actions of personnel; (2) an involved public who have personified the risk, threat, or hazard; (3) an informed public who is collaborative, fair-minded, reasonable, thoughtful, solution-oriented; and (4) trust between all affected parties (Hadden 1989).

The traditional goals or elements of risk communication include: (1) informing the publics about the existence of a risk (with no mention of management of risk); (2) eliciting response from the public about management of risk; and (3) final negotiation with affected publics about management of risk. The outcome of communication depends on intentionality. The monologue, or one-way communication, attempts to persuade others to adhere to one's view, whereas through dialogue, or two-way interaction, the goal is negotiation.

Concern for adhering to prescriptive methods during the communication process to determine various definitions, goals, or outcomes, creates tension between bureaucratic and democratic processes in arriving at a consensus. Deciding who is responsible (or capable) for dissecting scientific evidence into lay person's terms remains problematic. Thus discussions center on access to information generated by experts and industry, and who can understand and translate that evidence in risk communications especially when risk is uncertain or imposes burdens on unwilling risk bearers.

Some have criticized prescriptive approaches to effective communication practices because they cannot be implemented in practice (Earle and Cvetkovich No date). Prescriptive approaches do not account for the social dynamics of citizen involvement, the

technocratic orientation of risk managers, and the way decisions are made in a democratic society. For example, situational factors may prevent a risk communicator from being completely open about the risks involved. In other cases, institutional limitations may prevent the involvement of all relevant stake-holders. In many cases communication problems are manifested before public involvement can take place. In the case of the CSEPP, the chemical munitions have existed since the 1940's, but the possible risks associated with continued storage were not recognized by the public at large until Congress ordered disposal of the weapons.

3.2 REVIEW OF RISK COMMUNICATION APPROACHES

Comprehensive reviews of the field of risk communications have been limited. Covello et al. (1987) identify four broad types of risk communication according to objective. They label these types as information and education, behavior change and protective action, disaster warning and emergency information, and problem solving and conflict resolution. Kasperson and Palmlund (1987) identify five different, but more specific paradigms or perspectives according to approach: the information system, marketing, psychometric, the cultural, and the public participation approaches. Weinstein (1987) defines five theoretical perspectives on protective behavior in respect to risk communication: behavioral decision theory, social learning theory, psychological emotion and defense perspective, diffusion of innovation perspective, and cultural theory.

3.2.1 Classification of Risk Perspectives

Few attempts have been made to develop a transdisciplinary classification of risk perspectives. Renn (1992) presents his classification of risk perspectives by matrix. Renn notes that the conception and assessment of risk fall roughly into seven categories under social amplification theory:

- the actuarial approach that relies on statistical projections and predictions,
- the toxicological and epidemiological approach,
- the engineering approach that relies on probabilistic risk assessment,
- the economic approach that includes risk-benefit comparisons,
- the psychological approach (including psychometric analysis),
- social theories of risk, and

- **cultural theories of risk.**

The approaches vary by the selection of the operational definition, the choice of methodologies (including the underlying assumptions for choice of techniques for assessing the risk), the complexity of the risk measures, and the social function (intent) of the risk perspective (Renn 1992). Renn emphasizes that analyzing risk is an American cultural attribute and must be recognized as an underlying assumption because unlike some cultures, most Americans do not follow a fatalistic credo nor believe the future is predetermined. In a fatalistic oriented culture, attempts to assess risks make no sense as the cultural view holds that the future is predetermined and thus negative circumstances, such as trying to evade a hazard because of its risk, cannot be avoided. Risk is thus both a descriptive as well as a normative concept, dependent on the cultural dictum. What is interesting about Renn's analysis is that all the approaches that rely entirely on quantitative measures (the actuarial, epidemiology, probabilistic risk assessment, and those using expected utility) are considered one-dimensional while those involving public perceptions are viewed as multi-dimensional. While Renn has not examined the cultural validity of the approaches, he does suggest examining the "social function" of each approach, which ranges from mere assessment (characterized as one-dimensional) to political legitimation (characterized as multi-dimensional).

If one takes a broader view, a number of other perspectives on risk communication exist. Some of these overlap as well as share common theories and methodologies. A few are just emerging as new theoretical perspectives.

We categorize the varying perspectives as:

- **Communications (Lee 1986, Renn and Levine 1988)**
- **Journalism (Sandman et al. 1987, Peltu 1988)**
- **Psychometric (Slovic 1986, Keeney and vonWinterfeldt 1986)**
- **Management (Shrivastava 1987, Grunig 1987)**
- **Behavior modification/change (Covello et al. 1987; Smith et al. 1988)**
- **Marketing (Kasperson and Palmlund 1987)**
- **Cultural (Thompson 1980; Johnson 1987, Krimsky and Plough 1988; Raynor 1992)**
- **Public participation (Kasperson 1986, O'Riordan 1988)**
- **Social amplification (Kasperson et al. 1988; Kasperson 1992)**
- **Emergency warning/disaster (Sorensen and Mileti 1989, Covello 1988)**
- **Hazard awareness (Saarinen 1982, Sorensen 1983, Bolton 1987)**

- **Human Factors (Letho and Miller 1986)**
- **Evaluation (Greenberg 1987)**
- **Medical (Wertz and Fletcher 1987)**
- **Social teamwork (Earle and Cvetkovitch 1988)**

In assessing these perspectives we will look at two factors. The first is the maturity of the theory and amount of empirical research that supports the theory. The second is the nature of the sender and receiver involved in the communication process.

3.2.2 Communications

The communications perspective on risk communication grew out of social psychological research on the human communication process (Lasswell 1948; Hoveland 1948; Aronson et al. 1963) and became the central paradigm of mass communications and diffusion of innovation research (Rodgers 1983). The basic model postulates an analogy with a communications system consisting of an information source, channel, message and receiver. The research efforts sought to understand topics like source credibility, the effectiveness of different messages and channels in changing attitudes, the results of fear arousal on attitude change, or characteristics of receivers that effected communication effectiveness. Later research differentiated between a factual information flow process and a cognitive information flow which colors the factual one (Whyte 1977).

The communication approach is quite mature both theoretically and empirically. While it has received criticism on the grounds that it ignores social dynamics, much useful information has been produced by this line of inquiry.

3.2.3 Journalism

The major thrust of the journalism approach to risk communication is to understand how the media covers risk and, in turn, how to improve the use of scientific risk information by journalists. The major approach used by researchers is content analysis of newspapers (Sandberg et al. 1987) and television (Greenberg et al. 1989) and informal interviews (Sandman et al. 1987). Among the issues regarding media coverage that this perspective addresses are the accuracy of news reporting, the level of coverage given to different risks, the sources of the information reported, and the characteristic styles of the reporting. Some of the concerns about the media are the journalists attitudes towards risk

information, the sources used by journalists to gather risk information, the levels of detail media reports need, and the difficulties involved in obtaining relevant information.

The journalism perspective is largely theoretical. No overriding theories have been used to conceptualize or design research. The research has a fairly small empirical foundation but is growing.

3.2.4 Psychometric

The psychometric approach to risk communication grew out of laboratory studies conducted primarily by cognitive psychologists on how people structure and perceive risks (Slovic 1987, 1992). Much of the research is oriented towards people's use of risk information in decision making, how individual evaluative techniques and biases affect the individual's decision process, and how people attach attributes to the risk. A distinguishing feature is the use of psychometric scaling methods to produce quantitative measures of perceived risk, perceived benefit, and other aspects of individual perceptions.

The psychometric approach is firmly rooted in theories in cognitive psychology. A fairly robust set of empirical studies have been conducted, albeit only a few are directly concerned with the risk communication process. Much of the work has focused on how people perceive risks and segment risk into various qualitative attributes such as fear, dread, or likelihood of the event occurring. Most of the research has involved psychological testing or experimen tation with small non-random samples.

3.2.5 Management

The management approach to risk communication grew out of industrial crises experienced by large corporations—the Tylenol tampering, the Bhopal accident, and the Gerber baby food incident (Shrivastava 1987). The goal of the research was to seek methods that corporations could use to handle such crises as product tampering or large-scale industrial accidents. From the corporate perspective, the major goal of the research is to develop strategies that preserve the industry's public image and retain customers. Communications, mainly in the context of a public relations perspective, is considered the major vehicle for managing a crisis. Research based on this approach is largely theoretical and utilizes unsystematic case studies of crisis events.

3.2.6 Behavior Modification/Change

The behavior modification approach to risk communications developed from the applied behavioral research work in psychology and public health. The major question is what types of interventions prompt people to change their behavior. For example, what would induce people to quit smoking, wear seat belts, stop littering, adopt conservation, or use less energy. The two central theories of this approach are the health belief model (Cleary 1987) and the Fishbein and Ajzen (1972) model of attitude change. A wide variety of empirical investigations have been conducted in laboratory and field settings. The field studies have used a variety of quasi-experimental designs to capture the effects of interventions.

A good example of this approach applied to risk communication is described by Smith et al. (1988). In this study, different brochures with information on radon risk were sent to four groups of homeowners in a radon monitoring program discussing risks from radon. Measurements were made before and after the brochure was distributed in order to capture the differential impacts of the communications on risk from radon. Risk communication strategies used by the Health Protection Branch of Canada are intended to elicit public support on health risks. How people receive official information about health risks was examined in a public opinion survey involving 200 respondents (Liston 1989).

3.2.7 Marketing

The marketing approach adopts the premise that communicating about risks can be accomplished using the knowledge derived from research on how to market various consumer products (Kasperson and Palmlund 1987). A great level of effort is expended each year to research how people make decisions as consumers of various products. A basic thesis is that the public must have a demand for a product before they will consume it. Thus a goal of the risk communicator is to identify what types of information the public is willing to consume. It follows that people will ignore any information for which they do not have a demand.

Significant to this approach is the practice of identifying and segmenting target audiences. This is based on the concept that the same information package will not be suitable to everyone at risk. The basic method of the marketing approach is the attitude survey, although we know of no empirical applications to risk communication per-se.

3.2.8 Cultural

The cultural perspective on risk communication primarily came from work by social anthropologists and sociologists on risk acceptance. In part, this research was a reaction to fundamental ideological differences between the cultural and the psychometric perspectives on human behavior. The cultural approach stresses that risks are not a technical phenomena but are socially constructed. Cultural theory argues that risks are defined, perceived, and managed according to principles that are inherent in particular forms of social organization (Raynor 1992). Moreover, the perceiver is not an individual but an institution or organization that is driven by organizational imperatives to select risks for management attention or to suppress them from view (Douglas 1985).

Risk communication in the cultural perspective is not a specific target action but a broad set of practices and flows of information. According to Krimsky and Plough:

> **"A cultural approach that seriously considers popular behavior and symbolic dimensions distinguished two forms of rationality applied to risk: technical and experiential. Both make contributions to the problems of constructing and analyzing a risk event, but neither is sufficient.... The cultural model is based on the notion that expert and popular approaches to a risk event can each be logical and coherent on its own terms, but may exhibit differences in how the problem is articulated, in the factors relevant to the analysis, and in who the experts are." (1988)**

Research from a cultural perspective has primarily employed a case study approach involving qualitative data. The development of theory is proceeding, but on a fairly general or global level.

3.2.9 Public Participation

The public acceptance approach to risk communication grew out of research on public participation in political decision making (Kasperson and Palmlund 1987), including a number of studies on community or public acceptance of hazardous technology or large-scale engineering projects. Kasperson (1986) argues that the need for risk communication is a part of a longer term trend of increased public participation in decision-making. It is therefore necessary to look to research on public participation to help design risk communication programs.

From this perspective, the public consideration of risk occurs in social groups or community, but little is known about response of public as members of a social group, only as individuals. Since 'tolerable' risk levels are inextricably linked to the process by which risks are allocated or imposed, risk communication often becomes a vehicle of conflict by

which community groups seek to create resources, including power, with which to bargain in risk management decisions. The timing of risk communication entails a difficult trade-off between the social imperative to inform without delay and the need for full scientific disclosure and analysis. Different communication strategies and packages are needed to reach the attention of different social groups whose members differ in their participation and arenas of interest. The long-term erosion of public trust suggests the need for innovative programs to achieve short-run informing of the public in given situations, coupled with long-run strategy to recover social trust (Kasperson 1986).

3.2.10 Social Amplification

The social amplification perspective is a modern version of the communication perspective using an electronics analogy to replace the communications engineering analogy (Kasperson et al. 1988; Kasperson and Kasperson 1991). The central thesis states that hazards interact with psychological, social, institutional, and cultural processes in ways that amplify or attenuate public responses to risks. Amplification occurs both in the transfer of information about the risk and in the response mechanisms of society. Signals about risk are processed by individuals and social amplification stations such as in scientific risk assessments, the news media, cultural groups, interpersonal networks, and so forth. The amplified risk may result in secondary impacts. Models are used to portray elements and linkages of proposed frameworks (Kasperson et al. 1988).

The amplification model has received excellent response among risk communication researchers. Recent additions to the model have incorporated other paradigms and the model appears more robust than when first introduced. One recent addition to the model accounts for 'hidden hazards' whose risks may go unnoticed by the mainstream press or political system (Kasperson and Kasperson 1991).

3.2.11 Emergency Warning/Disaster

The emergency warning perspective grew out of sociological studies of human behavior in disaster (Mileti 1975; Mileti and Sorensen 1988). The central research question was why some people respond to emergency warnings, while others do not. The model developed from this approach suggests that people engage in a process in which the warning is heard, understood, believed, and personalized before people make the decision to respond. This process is influenced by characteristics of the warning sender and the receiver. Research has primarily involved cross-sectional studies of people in an area where a disaster warning occurred. A fairly robust set of empirical findings exist.

3.2.12 Hazard Awareness

The hazard awareness perspective developed from research conducted primarily by geographers on adoption of mitigative measures for natural hazards (Burton et al. 1977). The basic research question was how to increase public awareness about natural risks so people could make more informed decisions, such as building in a flood plain or buying earthquake insurance. The work has an empirical orientation, but is less developed theoretically than some of the other approaches and is still lacking in empirical findings. Research on how the National Floodplain Insurance Program (NFIP) has affected the ability of people to recognize and plan for hazardous situations in flood prone areas may result in a better understanding of risk behavior related to natural hazards.

3.2.13 Evaluation

The evaluation research perspective developed from assessments of large scale federal and other programs in domestic policy areas. The evaluations centered on the effectiveness of social programs including crime reduction efforts (such as neighborhood watch programs or home burglar-proofing programs), medical and health care programs (such as smoking cessation or drug abuse programs), educational enhancement programs and the like. It is similar to the behavior modification perspective, although the research questions have been framed differently.

According to this perspective, the primary considerations for successful risk communication programs includes clear definitions of objectives as envisioned by both experts and those at risk, identification of targeted risk groups, achieves identified outcomes, successfully provides a context for risk, is adaptive to new information as needed for management, and involves various stakeholders and interested parties in design and implementation of the program's evaluation. An evaluation is necessary to force clear thinking on goal outcomes, provide new options on risk management, to determine strategies that work or don't work, to meet responsibility that the most effective means are being used to reduce or avoid harm, to allow for monitoring and to ensure greater accountability of risk managers to policymakers and affected publics. Only an understanding of the whole risk communication process will enable valid inferences to be made about the impact of particular interventions.

The findings from evaluation studies are usually quantified and provide a basis for risk comparisons. However, the general public still finds it difficult to understand some of the units used to measure and assess risks or why the units were chosen in the first place.

3.2.14 Human Factors

The human factors perspective developed from applied studies of accident prevention in the workplace, assessments of worker right-to-know requirements, and consumer product labeling. Emphasis has been given to investigating the effects of programs such as training, safety campaigns, or workplace placards, such as Material Safety Data Sheets (MSDS), on worker performance and accidents. A second emphasis has been on the effectiveness of warning labels on consumer products and instructions inserted in pharmaceutical packages.

Much of the research is quasi-experimental involving pre- and post-treatment measures with control groups. For example, a typical research project would establish a baseline assessment on a group of workers who would be treated with four different safety programs. A post-treatment survey would measure changes in knowledge or attitudes. Additional work to monitor accident rates among the four groups might be performed. Thus findings are usually limited to specific case studies.

3.2.15 Medical

The medical perspective developed from research on doctor-patient relationships regarding diagnosis of illness, decisions on medical treatment options, and survival odds. The approach has also focused on genetic counseling and methods of informing workers of possible elevated health risks from chronic or long-term exposure to hazardous substances. Much of the work has studied the communicator, in this case the doctor, rather than the patient. An emphasis is on the ethical and institutional role of the professional rather than on the effects of the communication process on the recipients.

3.2.16 Social Teamwork

The social teamwork perspective was proposed out of a desire to get away from the technocentric approach of the psychometric paradigm (Earle and Cvetkovich 1988). The major objections against some of the recommendations emanating from the psychometric paradigm are that the suggestions are not implementable in a socio-political sense nor do they provide enough specific guidance on how they might work to solve risk communication problems. In addition, critics argue that the recommendations are anchored to the position that the risk managers have the correct view and communication serves to convince the public the managers have the correct view.

The social teamwork perspective advances the notion that there are multiple legitimate perspectives on a risk issue. The approach holds that solutions to differences in outlooks need to be negotiated rather than persuaded in order to be effective. The concept is still in a preliminary stage of development, largely lacking in theoretical development, with no empirical testing, but holds great promise of integrating a number of perspective discussed above.

3.2.17 Other Perspectives

Several other perspectives can be identified which are conceptually different from the others discussed above, but are not reviewed in detail. These include what might be labeled as the philosophical and the legal perspectives. The philosophical perspective developed out of research on topics such as the moral or ethical aspects of the communication process as intertwined with risk management practices (McLean 1986). The legal perspective is represented in literature that discusses and analyzes legislation concerning risk communication programs and the underlying legal and social doctrines, such as the right-to-know and need-to-know controversy.

3.3 ASSESSMENT OF THE APPROACHES

Tables 3-1 and 3-2 summarize relevant information on the various risk communication perspectives. In Table 3-1 each perspective is described in terms of the stage of theory development, the amount of supporting research, and research methods commonly used. In Table 3-2 the dominant sender and receivers in each perspective are summarized, as well as the perspective's bias, either implicit or explicit, towards treatment of the communication process as one of dissemination (one way) or as a dynamic process with feedback and exchange (two way).

In this source book we do not attempt to use nor advocate any single perspective. Some provide, in our viewpoint, more useful information for the CSEPP participant. Others may advocate positions that seem to be at odds with basic thinking about communications processes from a social perspective. For example, some of the literature that we would categorize as fitting into the management perspective advocate practices that some members of the public would view as dishonest or deceitful. Of course those advocating such practices place the results far ahead of the process. The danger therein is that often the process is a key determinant of effective results. Not all of the literature in the management category should be summarily dismissed on the basis of this one example. We have attempted, however, to focus the reporting to those findings and lessons to

relevant aspects of the CSEPP and that are not at odds with the basic tenants of risk management, assessment, and

Table 3-1 Risk Communication Paradigms

Table 3-2 Structure of Communication in the Paradigms

communications discussed in the previous chapter. In the next three chapters we summarize some of the commonalties and describe the diversities of the risk communications literature. We do not report these by perspective or discipline, but have attempted to integrate research findings with recommendations along common themes.

4. RISK COMMUNICATION ISSUES

4.1 INTRODUCTION

Risk communications contain both factual information as well as undefined assumptions about risk analysis that inherently frame the risk issues under discussion. Some communications are unclear as to what information they are intended to convey as well and what audience the information is intended to reach. While a number of formal models have been developed to describe the process of risk assessment and risk management both in the United States (NRC 1983) and in other countries (such as the Working Group on Risk Assessment and Risk Management in Canada 1988), no one model functions for all situations.

Exchanging information, evaluating measures used in assessments, and determining how to manage risks vary among researchers and technical experts, industry, government agencies, interest groups, and sub-groups and individuals within the general public. Risk communication has both conventional and symbolic meanings depending on the cultural values in which it is embedded and on the specific conditions of the hazard itself.

Risk communications for the CSEPP are somewhat different from other risk communication efforts. Risk communication that have involved community input have traditionally focused on the siting of hazardous waste disposal facilities, nuclear power facilities or some other hazardous facility, or, on emerging public health issues, such as the risks from smoking, drug abuse, recently discovered wastes, or from radon in the home. In the case of the former negotiations over acceptable risk is the dominant issue. In the latter case the issues center around individual behavior and health risks. While these communications involve the public and can include experience with the effects from the hazards, the values and underlying assumptions about the risks associated with the hazards are somewhat different than CSEPP. In CSEPP there is no debate over acceptable risk—all agree with the notion of maximum protection and the elimination of risk. CSEPP also focuses on the community and collective risk, not on individual behavior.

4.2 UNCERTAINTY

Risk communications for the CSEPP involve a great deal of uncertainty about the hazard itself. No government agency nor private industry has had sufficient experience with chemical agents in recent years on which to base an empirical risk assessment. Thus there is uncertainty about the effects from a release of chemical agent either by accident during storage or during the incineration process. The risk analysis originally performed for the chemical munitions determined the major risk to be from low probability, high consequence events. With the storage of the munitions benign to date, critics of the CSDP have raised a number of issues in the political arena about the proposed disposal plans. The uncertainties affect the risk analysis, the risk assessment, and the risk management strategies, all of which affect risk communications for the CSEPP.

4.3 TIMING

Risk communications are also time oriented. Information to the public may focus on risks requiring immediate response during crisis events or may relate to long-term personal or institutional changes needed to improve or benefit overall public health or environment. For example, giving information about a hazardous materials spill that requires people to immediately evacuate the area is different from communicating the health risks associated with highly fat saturated diets to a general audience.

In CSEPP there is a great deal of skepticism that timely communications will occur. During a crisis, risk communications require special management that insures coordination among various authorities, and (to the extent feasible) a single place where the public and media can obtain authoritative and current information (NRC 1989).

4.4 INFORMATION FLOW

Flow refers to the physical processes behind the communications process. At a simple level, flow can be differentiated into one-way versus two-way communications, depending, for example, on whether it is a party issuing information versus two parties entering into a dialogue. The direction of information flow should be examined when focusing on communication efforts. Whether the purpose is exchange, dialogue, and/or

participation depends on the identification of the communication flow as one-way or two-way oriented.

One-way also includes warning messages. For example, issuing emergency notification for a CSEPP related accident would not leave time for a dialogue. Providing information via a brochure or calendar is also considered one-way communication. Information generally flows in two directions (dialogue) during public meetings or when the installations hold open houses for the public and people can ask questions about installation activities. The impetus for the CSEPP came out of public scoping meetings the Army held at sites when preparing the draft programmatic EIS.

To date, most of the information flow in CSEPP has been one-way, with little dialogue or negotiation about the risk in the communities where the munitions are stockpiled. The general lessons learned in risk communications would suggest that this may be setting the program up for public controversy and conflict as people will feel they have not been brought into the dialogue early in the process.

Recommendations on discussing risks suggest that a tension exists in goals and methods used to attain the ends. Some advocate a continuing dialogue to enhance communication attempts. States Covello et. al:

> **"The goal of risk communication should not be to avoid responsible action nor simply to pacify local citizens but to produce an involved, informed, interested, and fair-minded public whose opinions and concerns will be (or remain) reasonable, thoughtful, calm, solution-oriented, and collaborative." (1988a)**

Only through genuine dialogue can the multiple characterizations of risk (all of which hold some claim to legitimacy) be accommodated and proponents and opponents attempt to understand each other's data and how each frames the issues (Jasanoff 1987; Davies et al. 1986). Because risk is a complex problem that transcends industrial concerns, risk management should be viewed as a joint enterprise providing for informed participation between persons at risk, risk generators, risk control agencies and their various experts (Baram 1986).

Dialogue often assumes negotiation. In the CSEPP little room exists for negotiating the impacts of an chemical agent accident. Communities will continue to live with the risk of the stored munitions. Moving the munitions from one locale to another (as advocated by some critics) was ruled out by expert risk assessments. Relocation of communities away from the storage sites would likely be socially unacceptable.

However, some negotiation has been possible. For example, how to use resources provided by the Army for CSEPP has been left to local jurisdictions. Local officials have

been able to negotiate conditions for warning publics as long as the standards for timing of warnings and notification have been met. The Army has also investigated using other methods of disposal besides incineration and brought it to the attention of national experts.

Another issue is dealing with public apathy. Johnson and Fisher (1989) contend that the usual method of attempting to reduce anxiety about risks is not consistent with public educational programs about risk facts. Some CSEPP communities have had to deal with a generally apathetic and passive community. Thus some risk communications may have to prod the public toward taking protective actions.

4.5 INTENT

A second major dimension of risk communications is intent. This refers to the psychological process, or goals as outlined by the communicator. The objective can be either exchange of information or persuasion. In the former, the emphasis is on compromise or negotiation, and in the later on cooperation, or indoctrination of the audience to the views of the communicator. Examples of intent in the CSEPP involve:

- **Persuasion - the Army has tried to convince the public that the agency is capable of maintaining a safe disposal process.**
- **Exchange - finding out concerns of public about safety, i.e. how will an accident affect home values?**
- **Acknowledgment - understanding between CSEPP and CSDP is not always clear and acknowledging that some issues are beyond the scope of the CSEPP is the only feasible communication message.**
- **Empathy - understand that people might still be apprehensive no matter how factual the information is and how clearly it is presented.**
- **Information dissemination is on-going - providing public information in the CSEPP will not be finished until the final munitions is destroyed.**

4.5.1 Intentionality

The conventional definition of risk communication centers on the intentionality of the source of the information and the quality of the information. The orientation of risk communications as the flow of messages to audiences has encouraged a "product delivery" perspective among some risk communicators. Within this mindset, the message or information is separated from the existing context and from the risk generation process, the assessment activities, and the broader range of social actions composing the risk

management process as a whole (Kasperson and Stallen 1991). Risk managers usually focus on the intentional transfer of information designed to respond to public concerns to real or perceived hazards. The conventional definition of risk communication thus incorporates defined or implicit goals for targeted groups about specific events or processes and how the information will be channeled from experts to a general audience.

As most people recognize, risk messages intentionally delivered to audiences are only one part of the interactive risk communication process. Risk messages include verbal statements, advertisements, pictures or videos, publications, legal briefs, warning signs, or other declaratory activities that describe, characterize or advocate positions or actions regarding risks, hazardous situations or technologies, or risk control options (NRC 1989). Sources who actually present or deliver (intentionally or unintentionally) risk messages are just as diverse - physicians, regulatory agencies, journalists, environmental or watchdog groups, health officials, or agency spokespersons can all act as sources of messages (NRC 1989).

4.5.2 Managing Public Knowledge

A strong theme in the literature on risk communications concerns implementing actions to influence public knowledge about a risk. One issue relates to the mechanisms to provide the communicator with insight into public thinking, such as daily polls to track people's awareness, perceptions and knowledge (Covello et al. 1988). Are such techniques merely the acquisition of knowledge about people's information needs or merely manipulative or public relation oriented?

A traditional mechanism for listening to public concerns is a public hearing. However, there are other alternatives to public hearings. For example, holding smaller, more informal meetings with clear-cut goals outlined or using one-to-one communication techniques for some situations may increase understanding (Hance et al. 1988). It is also suggested that communicators provide qualified experts, sometimes from outside the agency, who can consistently be relied on to present information throughout the life of the project (Hance et al. 1988). If an agency wants to control information reaching the public, public statements and contact with reporters and citizen groups by all employees also must be carefully controlled (Ozonoff and Bowden 1987). Sometimes it is in the best long-term interest of an agency to be tentative in identifying risks and at the same time create a frame to add future information (Sandman 1987).

4.5.3 Control of Information

How the flow of scientific information to the public is controlled has also been an issue, especially among experts who do not feel that the information they give is accurately reported. Dunwoody and Ryan's (1983) study found that most scientists perceive public relations (PR) offices at their institutions to play non-existent or peripheral roles in scientists' interaction with the journalists. Most journalists initiated their own contacts with individual scientists for information when it was needed. This contradicts the idea that PR offices control news about their organizations. The study also found information generated by PR offices was biased in reporting in that the offices relied on a few individuals within the organization who were older, prominent, and more organizationally powerful.

Recommendations about the amount of information to release to the public vary. Some experts advise giving only what is needed (i.e., need-to-know), with others advocate complete disclosure as soon as possible to all publics (i.e., right-to-know). Even what type of information is legally required will vary among jurisdictions as well as agencies.

4.5.4 Release of Information

Advocates suggest providing information tailored to specific audiences. Successful communications depend on providing people with the information they want (Cvetkovich and Earle No date). In this respect public comprehension of information need not be perfect, only good enough so that further precision would not materially improve decision making (Fischoff 1987).

Others advocate communication programs that provide honest, complete, and accurate information responsive to the needs and demands of the prospective audience (Renn and Levine 1988: 70). Evidence of competence, fairness towards other viewpoints, and references to commonly shared values and beliefs will make the message more attractive and help address the concerns of the centrally and peripherally interested audiences at the same time (Renn and Levine 1988). Some recommendations advise using a central source or spokesperson as a means of controlling the flow of information to the public. Centralize the flow of emergency information through a single, credible, senior spokesperson with good presentation and interaction skills (Covello et al. 1988a).

Risk communication should be looked at not only in terms of how accurate, detailed, or intelligible the information is but also in terms of how the information will be

interpreted by the receivers (Fessenden-Raden et al. 1987). Communication activities should be tailored to meet the expectations of specific needs of each community and coordinate with a specific response schedule (Pavlova and Luftig No date). The communicator working with a large audience must make distinctions related to individual and group differences in information needs (Cvetkovich and Earle No date). When determining what information is necessary, decide on major points to provide the media and add what people must know in order to understand and feel they understand (Sandman 1987).

Information must be conveyed in perspective and in the proper context (Upton 1989). Accurate dissemination to and among disparate groups requires appropriately specialized communication programs (Upton 1989). When information is released to the public, the potential regulatory and scientific uses of the information, as well as the policy implications it may have, should be indicated to the audience (Upton 1989).

Since accident risks require both preventative measures as well as "post-loss" measures (to control losses after an accident), industry officials must cooperate with local authorities. However, firms often encounter difficulty with local government officials because public authorities often lack the necessary skills, authority, and resources to develop, test, and manage emergency response systems (Baram 1986). Information on accidental releases of hazardous substances should be shared with the public, regardless of whether or not there is an impact on the community. To prepare for these events, hazardous facilities should routinely perform accident simulations with the community (Black 1989). This concept has been particularly important in the CSEPP exercise and training schedules.

Length of communication efforts is also an issue. This is a thorny issue when a hazard evolves over a lengthy time period. Gori and Hays (1987) observe that communication over natural hazards may have to be an on-going process, not a single act, and may involve continuing federal, state, and local interaction. How the U.S. Geological Survey (USGS) communicates information about geologic hazards may be even more important in averting future disaster than in the actual assessment and monitoring of geologic hazards leading to the disaster.

How technically oriented risks (often using specific technical terms) are translated to the public is a recurring issue. Jargon and acronyms are not helpful in communicating scientific risk information except among peer networks. Workers need information at a level of language that they can understand. Except for trade secrets, information supplied to the employee should be freely available not only to those entitled but to anyone else who needs information (Brower 1986).

Friedman's (1989) analysis of the TMI accident coverage suggest scientists would benefit from training in handling public relations. Without that training, scientists and the media act "like oil and water" (Friedman 1989).

4.6 PUBLIC EDUCATION

Another flow-related issue is educating the public about risk assessment. The basic argument is that an informed public, given necessary information, can make basically good decisions on its own—and in most cases will follow the advice of authorities or other "experts." Some advocates argue the public needs to be educated in how the information is derived in case inappropriate information is given initially and must be corrected at a later date (Perry and Lindell 1989). Since trust and credibility are assumed essential to those heeding warning messages at a latter date, the public should be advised that information is uncertain at the time of transmission if that is really the case.

The ability of the public to comprehend risk or to make "informed" (rational) decisions about risk management is a questionable issue among some risk communicators and managers. This apprehension about the public's ability reflects other deep concerns about public education overall and about individual citizen's general interests and abilities to comprehend risks. The issue also points out the underlying conflict between expectations of government agencies and the public in both communication and management of risks. In an era of rapid technological changes, critics have challenged the rationale of citizen's rights-to-know versus needs-to-know. The argument is that a proliferation of information about different risks, especially concerns for those risks which affect very small numbers, will mask the most important risks that individuals can control. A related issue is whether information or education about risks provides an adequate basis for "good" decision making or if publics will continue to base evaluations of risk on the more personal and qualitative or what Sandman (1988) refers to as the "outrage" aspects of risk.

The issue of public education of risks continues in the debate over when to start informational programs. Some see the need for comprehensive education of the public about risks and risk assessment as starting in the primary grades. Better judgments are supposedly based on facts underlying the process of risk assessment which can be learned at an early age. Some view on-going education as necessary to ensure public compliance to warnings in regions exposed to natural hazards such as those with extended volcanic threats. Perry and Lindell (1989) suggest in disseminating information about risks, emergency managers should seek to educate the public not only about environmental

threats but about the process (i.e., the bases) for evaluating such threats. Thus risk communication involves educating not only for the present but for future criteria for assessing risks.

The structural issue of revamping the public educational system has been raised. Keeling (1987) contends that higher educational institutions may be forced to take risks in educating their students about health risks such as acquired immune deficiency syndrome (AIDS). The results may structure consensus in the community to eventually provide good, solid risk reduction programs. Arkin (1989) argues the public needs to be taught to accept the uncertainties of science and to understand the concept of relative risk and the methods used to predict risk. The general public does not understand the concept of relative risk, and so personal decisions may be based on faulty assumptions. In Arkin's view, an informed public is more likely to be able to identify the strengths and weaknesses of risk measures and new risk information, relate that information to their personal situations, and thus avoid comparisons of dissimilar risks. But this knowledge is gained only through comprehensive changes in the educational system.

The issue that educational efforts have concentrated on hazards affecting individuals rather than risks that affect the collectivity or society at large has also surfaced. Plough and Krimsky (1987) argue that risk factor research and risk intervention programs have increasingly focused on the risky individual and less on the social and cultural context of risk, especially in the field of public health. These personal health risk assessments share with environmental risk assessments the notion of the "irrational individual," an individual who does not make rational choices about personal behavior to alleviate risks (such as wearing a seatbelt) and who exaggerates fears of hazards that experts consider relatively safe.

The issue of the irrational individual concerns underlying theoretical assumptions. Many assumptions about human reaction to risks or the probability of risks have been derived from the psychological literature. Cvetovich and Keren (No date) argue that, as a consequence of existing mental models, many people make incorrect conclusions that lead to undesirable actions or failures to adopt appropriate actions regarding risks. By examining the differences in audience's mental models, one can identify whether the differences are in knowledge bases or basically structural in nature, thus making risk communication strategies appropriate to different segments of the public.

Methodological strategies to reach the public through risk communication raise other issues. Studies have shown when multiple cues to characterize the same risk concept were used, people generally used the representation they found most comfortable and ignored the others (Desvouges and Smith 1988). While technicians and other experts place

primary weight on the importance of the magnitude of the probability estimates, lay publics used multiple cues in arriving at decisions. To overcome these differences, Desvouges and Smith (1988) advocate using focus groups to explore risk perceptions and how those perceptions are linked to personal attitudes and characteristics. Such focus groups are thought to improve the quality of information ultimately required in surveys and suggest further hypotheses for testing data while providing insights that illustrate the findings from quantitative results. Although focus groups are generally helpful in assessing risk communication efforts, focus groups alone are insufficient for evaluating the effectiveness of risk communication because the findings are qualitative and cannot be generalized to a larger population.

4.7 SOCIAL CONTEXT

It is important to identify whether the differences in perceptions are based in the group's lack of knowledge or if the differences are more structural in nature (Cvetkovich and Keren No date). A structural difference means that an institution or society may have attributes that make it difficult to understand about risks. For example, a fatalistic orientation toward accidents (I can't prevent accidents—they are part of my karma) may prevent mitigative measures to reduce risks from being made.

At a more complex level, efforts can be made to determine the validity of assumptions about audience mental models. When more than one group is involved in the communication process, the different mental models of these groups can be compared by experts and lists of common and distinctive aspects prepared and evaluated in terms of common and distinguishing aspects. The concept of developing audience appeal is widely used as a marketing strategy to target different audiences. However, it should not be concluded automatically that the purpose of risk communication is to convert audiences into accepting official models (Cvetkovich and Keren No date).

Communication tasks within the social context perspective suggest that the risk communicator can start to deal with the message recipient's social context by clearly defining the change in recipients' behavior which is the desired outcome of the risk communication (1988). Cultural rationality can only be understood when people's cognitive behavior is observed as they are threatened by an actual risk event. Some argue that to understand cultural rationality, one must address anthropological and phenomenological issues as well as behavioral ones (Krimsky and Plough 1988). Adds Mason (1989):

"As we seek to create an enlightened awareness of relative risk, we need to take into account risk perceptions that already are in the public eye."

Other suggestions include changing the term "acceptable risk" to "tolerable risk" because the residual risk is tolerated, but not always accepted. "Tolerable risk assessment is therefore a scientific art form" (O'Riordan 1988). One of the most promising developments of community acceptance to tolerable risk includes using respected local people as risk translators (O'Riordan 1988). Communications programs that involve risk studies should also include a plan for informing the wider community of the progress of the study on a regular basis, for communicating results as soon as they become available, and at the same time for educating the public about the difficulties and uncertainties of performing and interpreting risk studies (Ozonoff and Bowden 1987).

4.8 CREDIBILITY AND TRUST

Establishing trust about the Army's commitment to the CSEPP has been difficult given the history of Army activities in past. Opponents to the CDSP cite the Dugway 1960's incident and, more recently, two minor releases at Tooele and Johnson Atoll. In the case of one bunker explosion, a local mayor spent 6 hours to find out from the installation what happened from the installation headquarters. Such incidents, while related to the chemical weapons operational programs have strong implications for credibility and trust in CSEPP.

4.8.1 Credibility/Erosion of Public Trust

One major issue involves the credibility of experts, especially when consensus among experts is missing. Since both sides of controversial issues are now able to gain the help of experts, who the public should or chooses to believe about the consequences of a hazard is a real problem to achieving consensus about how to manage risks. Communicating the risk about a hazard includes estimating the range of problems associated with the hazard, and many experts disagree among themselves about probabilities or how to arrange a scale that is accurate yet reflects concerns of all involved, which may require more than numbers or statistics.

The issue reflects the contextual aspect of risk assessment, i.e., how to define to the publics, the risk to them at that time, at a later time, and so forth. What may be called for

is a different type of scaling that reflects other issues (such as age, proximity to hazard) that could be integrated into the existing representations to amplify their usefulness. Management strategies for long term risks may call for other types of scales or criteria that reflect other factors related to expanded timeframes.

4.8.2 Trust

Understanding the distinction between risk and risk acceptability is critical to overcoming mistrust and communicating effectively (Covello et al. 1988b). Trust in communication efforts refers to the generalized expectancy that a message received is true and reliable and that the communicator demonstrates competence and honesty by conveying accurate, objective, and complete information (Renn and Levine 1991). Trust consists of five components: perceived competence (the degree of technical expertise assigned to a message or source); objectivity (lack of biases in information as perceived by others); fairness (acknowledgment and adequate representation of all points of view); consistency (predictability of arguments and behavior based on past experiences and previous communication efforts); and faith (the perception of 'good will' in composing information) (Renn and Levine 1991).

Although trust and confidence are used interchangeably, confidence in a source can be distinguished from trust as a more enduring experience of trustworthiness over time. Confidence denotes the subjective expectation of receiving trustworthy information from a person or an institution. Dissenting groups are more likely to express concerns in a constructive manner when the decisions are not perceived as prejudiced (Pollak 1985).

4.8.3 Credibility

Credibility has been defined as "the degree of shared and generalized confidence in a person or institution based on their perceived performance of trustworthiness" (Renn and Levine 1991). The source must be viewed as competent, fair, flexible to new demands, and consistent in task performance and communication efforts to have credibility (Renn and Levine 1991). Since credibility plays a major role in the selection and evaluation of messages, the messages should contain enough cues to establish validity. Reference to neutral experts, explicit disclosure of motives, and justification for vested interests are among the factors that influence public perceptions of credibility.

It is important to assess and nurture credibility. One of the most effective ways to earn and nurture credibility is to follow up words with concrete actions (American Chemical). Emergency managers must attend carefully to credibility issues to insure

effectiveness in providing information and should be aware of factors influencing public perceptions of the credibility of their agency (Perry and Lindell 1987). At times recommendations confuse credibility with self-image and reward. For example, in an situation involving an industrial accident, it was recommended that the company use high level management to notify victims' families in person and assist in providing food, paying travel money, and arranging funerals—"Spending a few dollars on the families will pay for itself in the good will received" (Mitchell 1986). However it will not necessarily buy credibility which must be earned, not purchased. One challenge facing CSEPP is to avoid being labeled as a program to buy good will for the CSDP.

To improve credibility of an institution the vital factor is performance, not public relations. Confidence and credibility as linked by evidence of cost-effectiveness and openness to public demands have to be treated as complimentary, and not as substitution goals (Renn and Levine 1988). Governmental institutions will receive more credibility if they do not leave the impression of permanent crisis management, but of competence and preparedness for long-term threats and challenges (Renn and Levine 1988). The decision-making process and the past record of the institution should be included in the message so that people can assign competence to the actors and understand the trade-offs that have to be made in meeting the specific risk management tasks (Renn and Levine 1988). For example, the NRC should have played a greater role in providing neutral and objective information, but by fudging its position it lost credibility not only as an affective regulatory agency with anti-nuclear public but with the public at large (Mitchell 1986).

4.9 COMPETING CHARACTERISTICS OF RISK ASSESSMENTS

A complexity revealed in the daminozide (Alar) case is that for many technological hazards, multiple competent characterizations of risk can exist in the public domain with many different institutions invested with the responsibility for conducting scientific research and making credible pronouncements on risk (Jasanoff 1987). The important consideration for the public was not so much the substance of each statement but the more basic question as to who should be believed in the ensuing controversy.

Neutra (1989) examined problems with chemicals leaking from landfill for factors relating to credibility and community trust in government officials ability to handle the problems. The case illustrates that society's outrage increases with the visibility and concentration of the people at risk. By giving the community a substantial role in suggesting what needed to be accomplished, the agency established an on-going and

valuable relationship with the community resulting in increased trust and credibility in official actions.

Morgan and Vlek (1988) reviewed laws and examined four case studies on right-to-know policies. The case studies indicated that good neighbor relationships and sincerity coupled to appropriate constructive mechanisms significantly alleviated public concern about risks and established communal trust. The EPA policy included forming a community leaders network at the onset of a risk communication project, incorporating evaluation strategies employing focus groups and other appropriate methodology, maintaining flexibility that adjusted to community dynamics during the program, and planning presentations around community timetables.

Wynne's (1988) study on communicating risk information to sheepherders after Chernobyl found credibility affected communication efforts. The credibility of scientists and governments greatly influenced the effectiveness of communicating complex hazard information to lay people. The findings indicate that a communication program which ignores the social and historical context is likely to be self-contradictory, unrelated to rooted experiences and concerns and thus ineffective. Scientists misconstrue the lay populations fear of hazards—assuming that lay people expect a risk-free environment is false. The Cumbrians' reaction to Sellafield, a nuclear plant in England, and Chernobyl release substantiate the finding that lay people define and judge a risk according to their experience of those institutions supposedly 'in control' of hazardous processes, not just according to the physical parameters alone.

In CSEPP we have seen the beginnings of controversies over what constitutes an adequate assessment of risk and what are legitimate accidents to plan for. Often the views toward these topic are shaped and mixed by other issues such as the prevention of agent incineration or the procurement of new communication systems. Disagreements exists over the methods of risk assessment. Furthermore, difference have emerged over what constitutes a credible accident scenario. Often the accidents in the formal PRA that was conducted are viewed by local planners as nonsensical.

4.10 PUBLIC PARTICIPATION

The amount of public participation—how much the public should be told or involved—is an issue in any risk communication effort. Some support institutional changes in basic agency strategies and management to include more public input. As only monologues can be pre-packaged, dialogue with a community is the key to successful risk

communications, requiring commitment from both agency management and implementation by staff (Chess 1987).

The extent of public participation depends on the participants. Brown (1987) asserts that corporate legal defense may not be in collusion with professional dominance, but corporate attorneys challenge that citizen activists are untrained individuals who are incapable of making valid judgments regarding hazards such as pollution. This affinity is due to the fact that popular participation threatens not only the professional-lay division of knowledge and power but also the social structures and relations that give rise to environmental hazards. Traditionally, health hazards have been identified by two sources—scientific research and governmental regulation—but the efforts of environmental activists of the past decade have made community groups a third force in bringing environmental risks to the political agenda. "Popular epidemiology" is risk communication by lay persons to professional and official audiences, and as such it demonstrates that risk communication is an exercise of political power.

4.11 DEALING WITH DISAGREEMENTS

Risk communication is often stymied by differences between the lay public and public officials views of experts and expert systems in decision and communicating processes (Zimmerman 1987). The failure to deal with disagreements about the appropriate scope of concerns that the risk estimation process should cover arises continually and is a major factor in stopping projects. This can be partially alleviated with a comprehensive strategy which addresses people's fears that the facility will be abandoned or mismanaged or that the objectives approved today will differ from future purposes (Zimmerman 1987). In order to be successful in resolving conflicts, stakeholder groups should be involved early on, their values and concerns taken seriously, and the effort should be directed toward joint problem solving (Keeney and vonWinterfeldt 1986). Dissenting groups are more likely to express concerns in a constructive manner when there is appropriate involvement of all directly affected parties (Pollak 1985).

Some solutions to disagreements are counterproductive. The public emphatically does not need to be deluged with data on health risks from chemical exposures, general or specific, and told to make up its mind. The public instead needs clear signals; for example, when a chemical exposure crosses the boundary from trivial to significant (Roe 1989). It should be recognized that minimal standards are questions of expert judgment and are not necessarily a good mechanism for resolving disputes (Fischoff 1987).

4.12 ETHICAL ISSUES

4.12.1 Ethical Issues for the Media

A number of ethical issues have been raised about mass media behavior. The most critical researcher is Scanlon (1989), whose work in Canada on hostage taking and terrorist actions have led him to conclude that the media does not follow normal practices of checking out information when covering a terrorist-related crisis. Scanlon suggests that the media is often manipulated into assisting the criminal in seeking the maximum publicity in covering an event. Because the problem is so extraordinary (e.g., Scanlon uses the example of hostages being killed because of the media interference), Scanlon calls for a review of media practices and ethics in such events—before the government is forced to regulate media actions.

Shain (1989) raised the theoretical issue of how the media, primary the entertainment and news outlets, have influenced the American cultural antagonism toward all things nuclear. Although the accuracy of reporting is a major concern to risk communicators, the nature and roots of values, beliefs and fears that draw people together in opposition to nuclear power suggests the media has a more significant role than previously accorded in molding public perceptions. How risk communicators can counter the biased images promoted by popular media— especially inaccurate myths—is also an issue.

Another issue is the media's attitudes towards assessing risks in news reports. Singer and Endreny (1987) argue that media outlets tend to report on harms, not risks. Their studies on information supplied by media outlets suggest that the media can provoke serious distortions by not placing risks in a proper perspective. They found that the media rarely discuss benefits associated with risks. Virtually no news stories analyzed by Singer and Endreny provided readers with methods of assessing risks or risk impacts.

4.12.2 Ethics of Communicators

That effective communication is an interactive "two-way street" or "dialogue" is often forgotten in the melee of introducing information from experts or government agencies to the publics involved or affected. Moreover, that information must reach a number of audiences, not a single entity called the public, with different needs, wants, and levels of understanding. Unlike classic marketing strategies, risk communicators often

direct their messages toward a more global public, ignoring factors such as age, gender, and ethnicity of their targeted audiences.

Agreement generally exists on how messages are transmitted to the public. Two mass media outlets—television and newspapers—are used most prominently. A related issue of information transmission involves not only the accuracy of the message but the credibility of the source behind the information provided. A related question is how far the media should go in attempting to provide balanced viewpoints in risk communications. A final issue concerns how those in the media—journalists, editors, newscasters, science writers—refine, interpret, frame, synthesize, and rephrase the material in the original transmission in presenting the message to the public. It is this issue which may be the most critical. No matter how credible the source, how accurate the original message, how much information is given, it makes no difference if the message does not reach the intended audience. In this respect, the concept of the media as gatekeepers in determining what topics the public thinks about (but not how to think or how much thought to give about an issue) becomes important from a behavioral standpoint. Some experts providing information on risk thus prefer to handle the message themselves without the intervening reporter. Neil Frank, former head of the National Hurricane Center in Miami, was a prime example of an expert source transmitting his own message. There will still be interpretation of the message by media representatives 'to help the public understand' the terms and concepts, as well as the 'technical details,' in lay person's language. At that point the dissemination of information on risk becomes murky as to what message is finally transmitted.

Most risk communicators advocate that information dissemination on risks be an on-going, educational process. Journalists, however, look at events from the traditional 'news pegs' viewpoint—yesterday's news is old news—making continuing dialogue difficult. Some risk analysts have suggested continuing education programs for reporters and editors on communication of risk and have been fairly successful in promoting the use of media packets and forums (Sachsman et al. 1988). Sachsman et al. (1988) found that presenting information describing environmental risk issues at organized sessions, such as national or professional meetings, provided the greatest benefit and gained the most amount of feedback from journalists themselves. They also found that no matter what the risk issue, journalists still emphasized traditional methods of promoting events, no matter whether the risk was significant or not— perhaps reflecting the lack of responsibility to other than their professional interests. Their suggestion to make friends of the media and not view them as adversaries (i.e., remember their constraints and deadlines) appears one method of co-opting the media to consider the problem of transmission of risk. For those with high

standards of integrity or who have been burned by misapplication of their information when printed or quoted previously, the advice may appear irrelevant. Clearly it becomes an adversarial position from which no one benefits—least of all the public who wants and needs access to accurate, unbiased information to make the best decision about the risk. But reporters, as well as all other risk communicators, reflect their own biases as involved members of the public sector with their own definitions, values and belief structure about risks, and how to communicate such information.

4.13 RESPONSIBILITY

4.13.1 Public Responsibility

When the information provided to the public by the decision maker is honest, clear and as complete as possible, the public should be more responsive to the real issues; the public must then take responsibility for the decision that is finally made (Ruckelshaus 1987).

To determine allocation of risk management efforts, one should ask whether the hazard to a relative few from an identifiable source justifies giving the problem high priority and a generous share of resources. If the risk debate is framed in these terms and the value judgment is yes, then that judgment should carry great weight in the decision-making process. If the judgment is no, then changes may be in order. If the public "outrage" is high, and experts say it is low, then officials should get full understanding of outrage in the context of the hazard, and frame the issue in terms of competing resources (Allen 1987). "Not only must we raise, by direct action, the level of sophistication of the public's thinking about risk issues, but we must also do what we can to increase the number of people who can communicate effectively about risk." (Thomas 1987).

4.13.2 Responsibility in Media

The news media has been criticized for not acting responsibly in communicating risks to the public. News media should make every attempt to provide accurate, complete, balanced, and relevant information (Elliot 1989). Journalists must provide accurate information, particularly during a crisis. The most accurate media message might be the assessment that no one is really sure of the situation at the moment. Journalists are

obligated by their promise of accuracy (Elliot 1989). Journalists should try as hard as possible to present accurate reflections of reality (Greenberg et al. 1989). Journalists should carefully evaluate and cross-check validity and reliability of all disaster-related information (Covello et al. 1988a).

The first requirement for responsible journalists is to provide a truthful, comprehensive, and intelligent account of the day's events in a context which gives the misunderstanding (Krieghbaum 1979). Critics charge that current media coverage provides lopsided forms of environmental surveillance that points to an event as a random, unavoidable problem rather than as a problem for the social and technical system that produced it (Wilkins 1989).

It has been suggested that information be given that enables citizens to act responsibility. The new media is obligated to give readers and viewers information that tells them what they need to know to function effectively in society (Elliot 1989). Public panic is more likely to be caused by giving too little information too late than by "crying wolf" (Elliot 1989). Journalists should become well versed in the context in which disasters occur and should be critical of information provided by official sources. Prior to disasters, journalists should become aware of potential problems and should know the relevant context before a problem occurs (Elliot 1989). News organizations ought to help the public prepare for dealing with disasters. They should be willing to be active informants rather than reactive documentarians. This information should be given without causing harm (Elliot 1989).

One problem is how the media defines an event. Media should focus on the contextual meaning of the event rather than on victims or drama during coverage of a disaster. The audience needs a way to put the disaster into a context so people can cope and deal with the disaster; as part of public policy victims do not need further victimization by media (Elliot 1989). Media knowingly and responsibly ought to participate in setting the agenda for public and governmental discussions of issues involved with the disaster. There can never be enough public attention on the question of preventing and mitigating harm (Elliot 1989). For example, it has been suggested that TMI coverage should continue to keep the issues of safety and risk of nuclear power in the public's mind (Friedman 1989). Others argue that the public can and should be provided with a greater variety of kinds of news stories, and a better understanding of the risks involved in chronic environmental problems (Greenberg et al. 1989).

Although it is legitimate for journalists in their risk reporting to focus on risk aspects other than the statistical risk figures, they should not completely ignore

quantitative assessments (Sandman and Peters 1988). Journalists should seek and use a wider rang of sources of risk information (Sandman and Peters 1988).

4.13.3 Responsibilities of Experts and Scientists

Scientists need to keep local communities involved. There is no truth to the notion that panic is generated by risk announcements by scientists (Gori and Hays 1987). The task of the risk analyst should be to shed light on different factors of risk and not to hide them through reduction to a unidimensional concept that ignores them (Hansson 1989). By focusing primarily on the obligations of the expert risk analyst, advocates of improved risk communication often define problems too narrowly (Jasanoff 1987).

The traditional concerns of democratic societies-the effectiveness of participation and the procedural correlates of fairness-cannot be forgotten in the search for improved communication of technical uncertainty (Fischoff 1987). Experts themselves need to be educated about their own biases and about the existence of competing cognitive systems for evaluating risk (Jasanoff 1987). Future policy making, in the light of Bhopal, should focus at least as much on communicating what is known as seeking to fill in what is "completely unknown" (Jasanoff 1988).

In the minds of some, the major role of science is clear-cut: it must provide information on the analyses of risk (Press 1987). High quality science has to be partnered with a language to express risks clearly and accurately (Press 1987). Public pronouncements on risk are often put in policy terms that tend to be macro and not in a language that sensibly informs the individual (Press 1987). The responsibility to inform the media, and through them the public, about environmental risk belongs to the technical, scientific, corporate, regulatory and community news sources involved with environmental issues (Sandman et al. 1987).

4.13.4 Responsibilities of Industry

Right-to-know regulations are based on the premise that those who posses information that can enable another to avoid harmful consequences has a duty to disclose such information in a timely fashion (Baram 1986). One consequence of recent regulations is that managers must list hazardous chemicals known to be present in the workplace, indicating methods to inform workers of hazards associated with non-routine tasks and of the hazards associated with chemicals in unlabeled pipes (McDaniel 1986).

The risk creator should be a good neighbor to the community (O'Riordan 1988). Industry crisis management programs should provide proper treatment of victims and

families; minimize the length of crisis; and hasten remobilization (Mitchell 1987). It is important for industry to have, and to present to the public and press, pre-established methods for dealing with a crisis (Otway et al. 1988). What firms disclose, however, may not influence the community. People do not receive information in a vacuum. For example, some experts feel that nuclear energy is such a highly charged and symbolic issue that thinking in terms of risk is not the right way to view the conflict (Mitchell 1987).

4.13.5 Responsibility of Public Agencies

Little consensus exists over the extent and nature of responsibilities that are held by government in the risk communication process. A minimal requirements is that a communication have positive expected value and that it's anticipated net effect should be for the good, considering the magnitude and likelihood of possible consequences (Fischoff 1987). It is the responsibility of a government agency to communicate both what is known and what is unknown (Mason 1989). It is up to government agencies, or those agencies with more congruent time references and values, to take action to protect resident (Palm 1987). It is important that agency staff should amplify, not muffle, community concerns with the agency (Chess and Hance 1989). Risk communicators should increase their efforts to encourage the public to take personal risk reduction measures (Keeney and vonWinterfeldt 1986). Risk regulators must examine and analyze the whole spectrum of possible actions that can be taken to address a risk (Keeney and vonWinterfeldt 1986). In disseminating information emergency managers must strive to provide data as technically accurate as possible. When information turns out to be unreliable, the manger should make follow-up information that corrects the inappropriate information and provides a brief explanation of how the information got disseminated in the first place as this demonstrates control of the situation (Perry and Lindell 1987).

The extent of a program is also of concern. Administering any treatment should require a deliberate decision to the effect that its expected benefits outweigh its risks. The duty to inform should be more burdensome the greater the magnitude of risk (Fischoff 1987). New information on risk exposure should yield predictable change in observed behavior to reduce the probability of unfavorable outcomes (Johnson and Luken 1987). The consequence of ultimate interest is a potentially observable surrogate for actual improvements in well-being (Fischoff 1987). To establish the rights of professionals, it is recommended that risk communicators create an analogous institutional setting, with appropriate standards and responsibilities imposed on practitioners (Fischoff 1987).

Finally, agency responsibility for the consequences of a program is an important issue. Risk communicators must anticipate the consequences of their communications to increased risk group (Schulte 1989). Subtle changes in the way that risks are expressed can have a major impact on perceptions and decisions; this raises ethical problems that must be addressed by any responsible risk information program (Slovic 1986). Whatever the state of knowledge, those administering any treatment should be ready to ameliorate any side effects and perhaps provide compensation for them (Fischoff 1987). Public health policy should ensure safety, not harass industry or needlessly terrify the public (Whelan 1989). The consequences of risk notification should not be used as an excuse to avoid communicating pertinent risk information but rather be viewed as an inspiration for initiating the risk communication process correctly (Schulte 1989).

This chapter raised more questions than it provides answers. It illustrates both the breadth as well as the complexity of risk communication issues and sheds light on how controversy occurs among and between communicators. In the next chapter a more proactive approach to practical communication processes is addressed.

5. RISK COMMUNICATION PROCESSES

5.1 INTRODUCTION

The various perspectives used to analyze the risk communication process are basically related; some crucial divisions in theoretical approaches bias the arguments as presented in the literature. Those writing from a communication viewpoint focus on the source, the channel, the message and the receiver—essentially a one-way linear flow model that assumes a receptive, although not necessarily passive, receiver. Recipients, moreover, seek out more than one transmission of the message. Whether such action, referred to as personalizing, is intended to verify, to confirm the information, or to assess other options before taking action is unclear—and probably all three behaviors occur at some time during the early response process.

The six stages of human response regarding risk communications include receiving, understanding, believing, personalizing, responding and information seeking (Sorensen and Mileti 1989). Receiving can involve using sensory abilities including hearing, seeing, smelling, or feeling as an information recognition process (I hear a siren; I smell something strange). Understanding involves attaching a meaning to the sensory observation (it might be a chemical accident). Believing involves the cognitive acceptance that the understanding is correct (the threat is real). Personalization is the acceptance that the belief affects one self (I could be hurt). Response is the decision to take an action because of the new information
(I will stay inside the house). One of the actions can be to seek new information or confirm existing beliefs (I will call 911 to ask if something is wrong).

In this model cognitions and behavior are affected by a number of factors regarding the communication process—essentially the who, what, when, where, and why of communications. These include:

- **Source: Who is the information from?**
- **Message: What is said and why?**
- **Channel: How is it disseminated?**
- **Audience: To whom does the message go? and,**
- **Timing: When and how often is it received?**
- **Impact: Where are response made?**

In this section we explore some of the research finding on the risk communications process. This is organized around the basic model of the communication process (see Fig. 5-1).

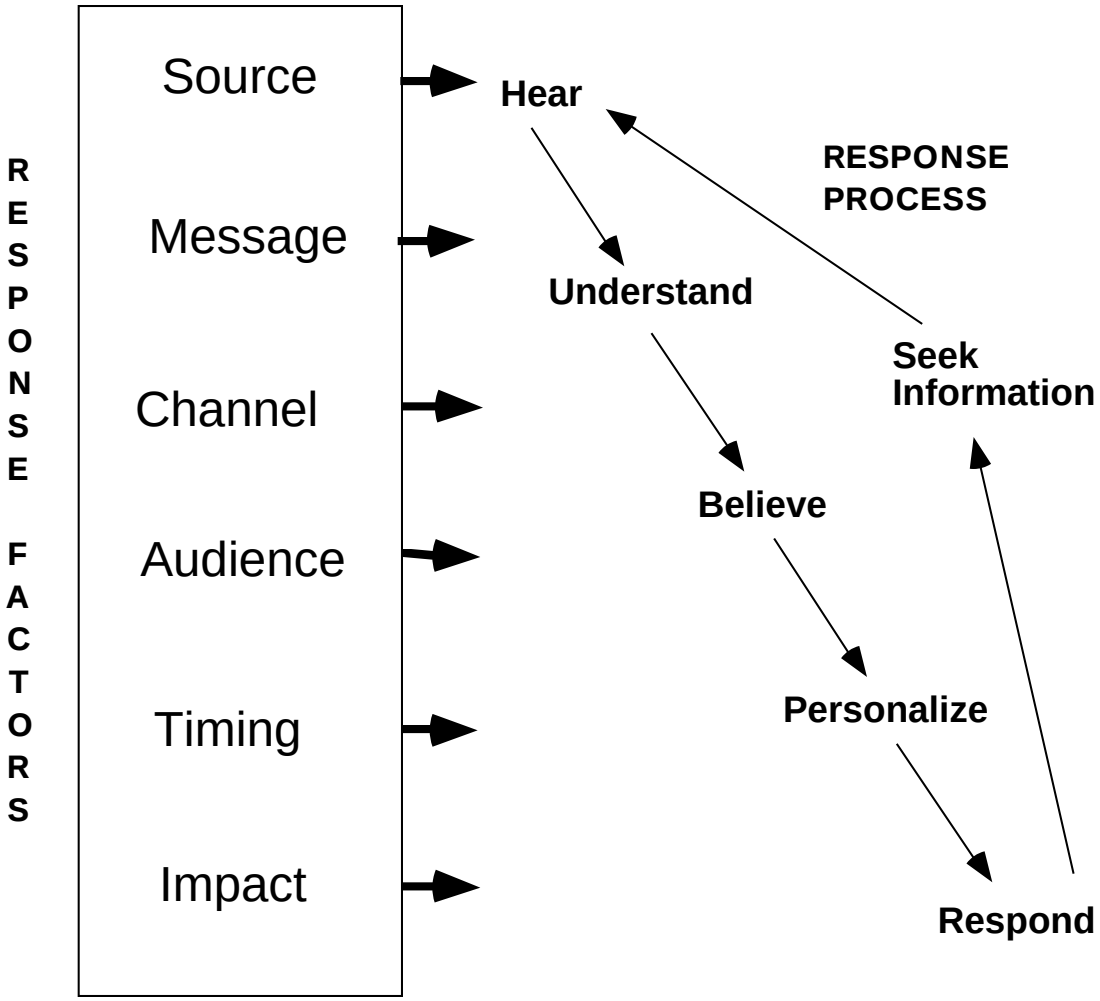

Figure 5-1 Communication Process Model

5.2 SOURCE

In communications literature, a source is the basis for information contained in the message. Generally, a source is considered an expert or authority on some aspect. In other instances, information may come from official government sources. As mentioned previously, the media can also act as a source when journalists use investigative reporting techniques. In Chapter 1 we listed some examples of information sources for the CSEPP. Consideration of source in a risk communication program is critical as no single source is

credible to all people. In CSEPP we know that the Army is not credible for some but highly credible for others. The same can be said about others involved in the program.

5.2.1 Source vs. Channel

Certain channels are more frequently used by specific sources. Whereas information from friends, relatives, and neighbors is derived through personal conversation, authorities generally use a variety of other channels, both visual and audio, to reach audiences. The mass media can be conceived both as a channel and a source—a channel through which information is passed and a source when information is gathered by reporters and disseminated to the public. The latter occurs particularly when journalists report on a chronic environmental problem or on multiple or extended disasters.

Perry and Lindell's (1989) sensitive treatment distinguishing source and channel illustrates the difficulties in methodological discussions of message transmissions. The distinction between source and channel is clear analytically but in reality rigorous attention to differentiation is seldom made in the literature. Perry and Lindell point out that risk communications take place over time among a variety of social actors to ensure or preserve public safety or as a precautionary measure to alleviate future threat or harm.

Perry and Lindell (1989) discuss the difficulty in separating the information source from the communication channel. Conceptually the information source concentrates on the person or agency that constructs the information forming the message. A communication channel is a mechanism through which the message is transmitted. Emergency management authorities, police, firefighters, friends and neighbors are clearly sources. Messages developed by these sources may be delivered through a variety of channels—personal conversation, public meetings, brochures or mass media.

Sachman et al (1988) argue that the concept of the mass media as a source may be a semantic rather than a theoretical proposition. Messages are frequently changed as they move in a multi-step process through various opinion leaders or experts to audiences. In mass communication the source is the medium (journalists and editors), not the government, industry or experts who attempt to provide their own messages through the mass media. The source of mass communications is, in reality, the mass media themselves and their means of operation. The mass media through their own values and constraints are not only a critical source of risk information but an active transmission channel that can change and frame the messages chosen to be delivered. In setting the context and language of messages, the media can shape audience perceptions (Sachman et al, 1988). To

improve news coverage of environmental risks, it is critical that experts improve access to and availability of environmental risk information to the media (Sandman et al. 1987).

Wilkins (1987) suggests using critical events theory to understand the media's messages on technological hazards. According to this theory, coverage is event oriented and assumes media messages have greater impact than just the factual information disseminated. According to Wilkins, while the dramatic retelling of an event by media provides a qualitative understanding of an hazardous event, such reporting is distorted because it does not include the deeper issues related to the "whys" of a situation or to the associated preparedness and warning factors. To permit more political and social debate about hazards, such as the trade-offs between costs and benefits of technologies and the associated risks, media should educate their members about hazards and shift the tone of news reports by placing the hazard in context, discussing how uncertainties in science occur, and broaden sources. By more comprehensive reporting, the media can provide information about technological hazards that encourages dialogue that is both appropriate and capable of leading to change.

5.2.2 Source Credibility

Most everyone involved in risk communications agree that a credible source of information is needed. Some believe that credibility of information sources is the key issue in risk communications (Renn and Levine 1991). Credibility is influenced by a variety of factors which are reflected in the following recommendations. When using a single spokesperson choose one that is knowledgeable and never change spokespersons in the middle of a crisis (Withers 1988). Try to use intermediaries (especially the news media-conscientious scientists, health professionals, and journalists) who share common perceptions that the public has a right to know about risks that affect them (Mason 1989). In general, lawyers do not make good public relations people (Grunig 1987).

It is important that communicators place news into the media rather than to wait for the media to discover news on their own (Mazur 1987). New sources for disseminating risk information in a community, in addition to existing sources, should be developed and supported (McCallum and Covello 1989). For example, physicians could also be trained in chemical risk issues (McCallum and Covello 1989). Press coverage of environmental risks can be improved both through the use of continuing education techniques and the actions of environmental news source (Sandman et al. 1987).

In CSEPP, little attention has been given toward figuring out how the information source affects the use of information. Very little attention has been paid on setting the agenda for the media rather than allowing the media to set the agenda.

5.2.3 Multiple Sources of Information

Differences exist over whether a single or multiple source of information is advantageous. For example, some have recommended that evacuation and shelter instructions should be provided through a single, authoritative, and credible source (Covello et al. 1988a). Others suggest that enhanced response to warnings occurs when specific, consistent, and clear warning messages are given; messages should be frequent in number and come from multiple sources (Sorensen and Mileti 1987). Some argue that three strong arguments presented by three separate experts is more persuasive than using a single presenter (Lee 1986). Repeat the message using a variety of media, organizational vehicles and authorities (Needleman 1987). The primary lesson is that a single notification, even in written letter form, is not enough (Schulte 1989).

Whether or not a single spokesperson is advantageous in CSEPP is a matter of situation. In an emergency it is desirable to have multiple sources. Given a controversy over an uncertain issue, multiple perspectives are desirable. In an event like a terrorist incident, a single spokesperson may be advantageous. Our interpretation of the literature is that in most every situation, multiple sources are desirable as long as there is some consistency in the message.

5.3 CHANNEL

A channel is the means or conduit by which a message reaches the intended audience. In communications literature, the channel is differentiated from the source as being the vehicle that transmits information from a source to a receiver, or multiples thereof.

5.3.1 The Role of the Media as a Channel

One of the major findings from the empirical studies concerns the role of the news media when other normal channels of communications fail during a crisis. For example, following the Miamisburg, Ohio, train derailment in which phosphorus was released from a tanker, communications among responders were hampered initially by lack of knowledge

about what was happening, what agency was in charge, and in emergency responders lacking basic equipment, such as walkie-talkies, for communications (Franks 1989). The news media were the most used channels for communications with the public (Franks 1989). The pre-planned policy of having a single spokesperson respond to media requests and of discussing items before they were released to the media resulted in only a few instances of conflict and helped to maintain credibility (Franks 1989). During the event, helicopters operated by the news media allowed emergency responders to maintain visual reconnaissance of the site obscured at ground level by billowing smoke. Likewise 86% of respondents in one study reported they received most of their information about Hurricane Hugo from television (Faupel and Kelley 1992).

Just as audiences should not be viewed as a single entity, the mass media should not be viewed as a single entity—multiple media with multiple impacts (Peltu 1988). The "news media" is not a monolith but a term that stands for a large variety of organizations which differ greatly in practices (Litchtenberg and MacLean 1991). It helps for the communicator to develop contacts and show respect for the media as viable channels for transmitting emergency information (Stockdale and Sood 1989). Emergency managers need to reevaluate the nature of communication channels used to provide hazard information (Perry and Lindell 1987). To maximize communication efficiency, a mix of channels should be used with thought given to systematically incorporating the news media into the mix (Perry and Lindell 1989). When there is minimal time for advance warning of certain natural hazards, the media are effective warning devices (Wilkins 1989), although others recommend that the media provide effective warnings when given lead times of three hours or more (Sorensen and Mileti 1988).

Friedman's analyses (1981, 1989) of the content of media coverage of the 1979 accidental release at the TMI nuclear power plant suggest that most journalists are influenced by direct involvement in community events. While local media outlets increased the scope of TMI coverage since the event, coverage has been spotty for national media outlets where journalists continue to make mistakes or show extensive bias in their reports on nuclear power (Friedman 1989). The continuing lack of journalistic training in radiological issues suggests that in another accident members of the pubic will again lack the in-depth coverage and people will be forced to judge their own long-term risk and overall safety of nuclear power without explanatory help from an informed media (Friedman 1989).

Interpreting radiological information provided by experts for public consumption is not just an issue within the United States. A similar lack of understanding was clearly evident after the Chernobyl accident where journalists from the European communities had

trouble interpreting the radiological measurements and the effects of the assessments issued by various experts. A 1987 study that systematically analyzed British and Dutch newspapers reporting on the Chernobyl accident found more than 400 quotes illustrating ideas on radiation incongruent with the accepted scientific theory about radiation and its effects (Eijkelhof, Klaassen, Scholte, and Lijense 1987; Keren and Eijkelhop 1991). Confusion existed between irradiation (being exposed externally to radiation) and contamination (having inhaled or ingested radioactive substances).

Wilkins (1987) concludes from her analysis of the media's role in the Bhopal chemical disaster that the mass media plays a central role in societal discussions about hazard mitigation from harmful but useful technologies. By portraying science-related stories both visually and from the individual victim's viewpoint, rather than from a broad analysis that includes the benefits and costs at the societal level, the media may be contributing to a mythology about science and technology that may have far-reaching implications for decision-making. Lichenberg and MacLean (1991) conclude that over the last twenty years the media has become increasingly negative in the portrayal of technological issues, while the objective indicators for those issues have shown a decline in risk. Moreover, as an integral part of the social and political processes covered, and not simply detached transmitters of messages, the media can easily become tools of politically interested parties. Lichenberg and MacLean (1991) also suggest that when risk issues are embroiled in social and political controversies, media reports of such issues are more likely to fuel rather than resolve disputes over the issues.

The media's influence on risk communications is undebatable (Plough and Krimsky 1987; Covello et al. 1988; Byer 1989). What is questioned is the extent and in what areas the media exerts the most influence (Peltu 1988; Lichtenberg and MacLean 1991). The issue is further complicated by evidence that media outlets can serve as both sources and channels for information about risks, thus raising the media's ability to influence, and hence bias, public debate by disseminating risk information to the various audiences and decision-makers. The media also exerts influence over the topics reported and the methods of presentation designed to attract audiences. Which segments of the public are most likely to respond to specific messages and if the messages are ignored or eventually translated into appropriate actions, given the level of risk involved, are additional issues. A particular concern is the disproportionate amount of network news time focused on acute and dramatic events rather than on the chronic environmental risks which directly affect more people (Sandman et al. 1987).

Wilkins (1987) notes in analyzing the media's coverage of the Bhopal disaster that the media's role in hazard awareness points in two directions. While the media can be very

effective in educating the public on hazards, the actual information in messages may be distorted or never disseminated because reporters lack the scientific basis for understanding hazards.

5.3.2 Television

Greenberg et al. (1989) reviewed television coverage of risks over a 26 month period between January, 1984, and February, 1986. The study found that television media are more attuned to visual impact and drama rather than to risk issues, with newness required for newsworthiness. In terms of sources used, journalists try to balance competing viewpoints, except where the source is the "official word" of the federal government. In addition, risk as calculated by scientists had little to do with the amount of coverage provided by the three networks' evening new broadcasts. Only 13.8 hours (1.7%) of network evening news time in 26 months concerned human-induced environmental risk issues. The disproportionate emphasis on the spectacular events rather than chronic risk issues reinforces the public's overestimation of health impacts of acute risks and underestimation of most chronic risk issues. Greenberg et al. (1989) concluded that the public's conception of risk is almost certainly distorted by television's focus on catastrophes and its dependence on film images.

Results of Hurricanes Alicia and Danny studies support other research that media (especially television and radio) were the pervasive first sources of disaster warnings and served a distinct surveillance function (Ledingham and Walters 1989). The media had reasonable credibility in forecasting and reporting news in general and was used as the major source of information on how to prepare for storms. Although the media served to alert the population and to provide information on response options, discussions with friends and family were found equally important in determining the options respondents ultimately choose (Ledingham and Walters 1989).

Some evidence exists that media reporting of crises in newscasts shape public values and perceptions. Nimmo and Comb's (1985) review of the nightly evening coverage of six events—Jonestown, TMI, American Airlines flight 191 crash, Mt. St. Helens eruption, the Tylenol deaths and the American hostages in Iran—confirms the role of value assessment of events by the three major networks, ABC, NBC and CBS. The authors argue that by offering a view of what things are about and a value-oriented interpretation of the situation, the networks make assumptions about situations and about their audiences that significantly influence their audience's perceptions of the event. The coverage shows that the three networks define crisis for viewers in distinctly different ways. CBS relies on

interpretative sources whose overall purpose is to make the awesome more manageable—to make the system work. ABC features famous actors as ordinary people in which the crisis becomes an ever-intensifying alarm, a type of subversive rhetoric that seeks to undermine the credibility of some person, idea or institution. Resignation with the affirmation—life will continue—is the byword with NBC.

Other researchers of the media are more critical of the role of visual images portrayed by the television media in bringing the incident "home" to viewers. It is television's ability to "show" rather than "tell" that makes its reportage so potent. Wilkins (1987), after examining media coverage of the Bhopal disaster, suggests a four-point program to remedy the current portrayal of technological accidents. The remedies include placing the event in larger context, providing a discussion of the science of the event that necessitates journalists becoming better informed about science and not just discussing opposing views, broadening existing sourcing patterns to include more balanced interpretation of events, and a discussion of the long-term issues. Such changes will allow hazards, particularly technological hazards, to be placed in the political and social arena where democratic decision-making can take place.

5.3.3 Print Media

A content analysis of AIDS editorials conducted over a five year period by Burd (1989) found that originally most editorials were directed to physical mortality rather than to the issue of social morality. Overall, editorials emphasized a "fix-it" mentality, assigning to "education," "science," and "research" a public (often government) responsibility rather than focusing on a personal liability for AIDS. As the epidemic worsened in 1986–87, editorials were less tolerant of gay civil rights but still lacked specific information about safe and unsafe sex practices.

Freimuth and VanNevel's (1981) studies on the asbestos public service information campaign revealed a lack of incentive for media outlets to publicize the asbestos risk. The asbestos campaign had difficulty in influencing the newspaper coverage of asbestos awareness. The asbestos awareness campaign was a model campaign because it incorporated objectives commonly advocated for public service campaigns: clear campaign goals, adequate campaign length, targeting messages to specific audiences, high quality production, use of localized tags, personal contact with gatekeepers, and evaluation of the campaign with the use of controls.

McKay's (1984) studies included pre- and post-surveys on flood information given to the public. The results indicated that media coverage of the flood hazard information

reduced public criticism of the flood reduction works attributable in part to media emphasizing positive aspect of projects. The survey demonstrated that personal delivery of the information raised perception of the risk, improved comprehension of the risk and discouraged respondents from seeking information in the future but had no impact on acceptability of the risk. Explanatory factors include the map sheet and low salience of flood hazard. To reduce negative impact, hazard information should be launched after a local occurrence of a hazard because the event will increase the salience of the hazard and the hazard information may have more positive impact on the population (McKay 1984). Results suggested the most desirable format for news releases was obtained by manipulating the scale or size of the map to depict the hazard prone zones as small in relation to the hazard free zones (McKay 1984).

McKay and Finlayson's (1982) studies on media reporting and requests for flood information maps indicated saliency played a major role in getting media response in publicizing a potential risk. A content analysis of various news media's coverage showed the media generally ignored the floodplain maps. Requests for maps were minuscule compared to sales of flood inundation maps prepared for Brisbane, Queensland, after a disastrous flood in 1974. The effect of experience of a flood is evident on both population and the media in Brisbane when compared to the Adelaide data. In addition to low prior awareness of flood risk, the low prominence of the story in the mass media, the content of the media reports and the positions of the paid advertisements in the press all contributed to poor community response to the maps and inhibited the impact of the information given to the public on awareness of flood risk (McKay and Finlayson 1982).

Mazur's (1987) review of the national news media coverage of homeowners' risk from radon revealed the media waited four months after discovery of the radon problem to promote public awareness. The lack of interest shows that it is important for sources to place news into the media rather than waiting for the media to bring the risk to public attention. "The mass media are the primary vehicle that conveys information about hazards to the public attention," notes Mazur (1987: 86). However, it is uncertain if the worries and remediation costs now being expended on lower levels of radon are warranted. Since no one profits from defending natural radon, there is little challenge to dire risk estimates—estimates most experts regard as exaggerated (Mazur 1987).

Sandman et al.'s (1987) study criticized journalists for failing to report the contextual aspects of risk when the New Jersey Department of Environmental Policy promoted efforts to increase radon awareness. The results of surveys indicated the most common response to the radon issue was apathy, and that most individuals in the at-risk area needed to be prodded in the direction of rational concern. The results support the

contention that homeowners are not using the same type of information as experts (i.e., radon levels) in forming their response to radon. Factors such as fairness, naturalness, familiarity, and controllability are seen as essential components of risk. If these factors are taken into account, the public's response to risk becomes both rational and predictable.

Nelkin (1987) reviewed media coverage of health risks from dioxin to explore characteristics of risk reporting. Based on secondary information and case studies of news media coverage of risk events, Nelkin (1987) advocates using public relations techniques to package information about health risks of dioxin for dissemination to media outlets.

Krieghbaum's (1979) short pictorial article on the TMI coverage revealed the *New York Times* provided best and most accurate information on TMI. The *New York Times* provided readers with a crash course on background needed for making intelligent decisions following the nuclear power accident at TMI.

5.3.4 Mixed Media

Lichtenberg and MacLean's (1988) research focused on the media's role in risk communication by reviewing previous research and case studies. Because people process positive and negative information differently, it is unreasonable to expect that an adequately and accurately delivered communication will suffice for achieving consensus on risk issues. Risk communication cannot be expected to resolve the conflicts which inevitably arise in society over the choice and implementation of technologies (Cannel and Otway as found in Lichtenberg and MacLean, 1988).

Evidence suggest a gap exists between the content of news coverage and public perceptions and understanding of risk issues with the media constituting the source of much if not most of the public's information about risks and technologies. They suggest that risk is not an either/or concept but a matter of degree. Where risk issues are embroiled in social and political controversies, those controversies themselves form an essential part of the "reality" that news media must cover. Moreover, it is never possible to be certain, and rarely possible to be confident, that an effect was caused by media coverage rather than something else (Lichtenberg and MacLean 1988). These authors note the media do not convey an accurate picture of reality and that this new portrayal of reality by the media leads to a fundamental change in the public's views. They further note that the increase in press coverage of an event or technology contributes to intensifying the sense of danger, even if the coverage is not particularly negative. They found that most people rely on a few heuristics and rules of thumb in estimating risks or probabilities and are concerned not only about the magnitude of risks but also about other qualities of the risk, adopting a

reference point from which outcomes or choices are seen as positive or negative. This reference point is influenced by how the choice is presented or described by people. They suggest that the most important reason behind the inadequacy of risk communication is the fact that they are judged against criteria which are inappropriate (Lichtenberg and MacLean 1988).

Otway et al. (1988) analyzed the Chernobyl media coverage in seven countries following the radioactive release. Although all media types reflected confusion, print media was found more accurate than television. Otways findings on media accuracy agreed with the United Kingdom study by Herbert (1987) that the more "responsible" print media did a good job of covering Chernobyl accident, especially in conveying information provided by the authorities. The Otway (1988) study found media reasonably good at reporting information provided by official sources but problematic in highly technical topics, especially with units of radiation, contamination and exposure. Crisis management procedures were generally perceived by the public as inadequate and confused. Confusion as to differences in cross national attitudes in handling problems affected communication credibility. In this case, the media coverage reflected confusion but did not create it.

Sachsman et al. (1988) describe the continuing education programs designed by the Environmental Risk Reporting Project to educate media representatives about covering environmental risk. The key audience for the continuing educational programs is the local-beat and general assignment reporters and their editors, not the specialized science and environmental writers from the larger news networks. In conducting the programs it was evident that journalists think in terms of traditional journalistic determinants of news—"news pegs"—rather than in the scientific degree of risk. Thus journalists make assumptions based on their own definitions and expectations. To influence the media and provide better information, news sources should adjust their messages according to the needs of journalists.

Sandman et al. (1987a) reported on the archival analysis of 26 newspapers in New Jersey. They found that: (1) reporters do not perceive a need for background risk information in stories about hazardous environmental situations; (2) when reporters do include risk information in breaking stories, it is the most basic risk information; (3) in some cases reporters have trouble finding risk information, but in general, the little they want in breaking stories they have little trouble finding; and (4) when reporters want risk information, they want it chiefly from officials, preferably government-sources.

Scanlon (1989) studied media reaction to terrorist events. Arguing that the media reacts differently when criminal or terrorist events occur, the study details a number of events in which the media responded to hostage taking by intervening in the event. The

interference of the media in publicizing and reporting the events was occasionally disastrous, resulting in the deaths of hostages. Scanlon argues that the manipulation of the media publicity by the hostage takers cannot be avoided through voluntary media practices and may have to be regulated. In dramatic criminal acts, normal media procedures such as checking information is ignored.

5.3.5 Use of Multiple Channels to Notify the Public about Risks

A consistent recommendation is that multiple channels should be used for communications. Normal communication channels often break down in emergencies (Covello et al. 1988). Emergency managers need to reevaluate how they can use media outlets to expand the available sources of hazard information (Perry and Lindell 1989). The media and interpersonal channels of communication serve complimentary roles, with each acting, at different times, as a prelude or as a support for the other while fulfilling their unique roles (Ledingham and Walters 1989). In some emergencies, especially when the public must be informed rapidly of developments and advised on how to behave, governments can communicate effectively with citizens only through the mass media channels (Otway et al. 1988).

Individual notification of risk also must be accommodated through multiple channels. It is not sufficient to consider the notification process as merely a dispatch about individual risk status (Schulte 1989). The initiation of individual notification activities should be approached as a process with component stages (Schulte 1989). Opportunities should be provided for confirmation through multiple channels (Covello et al. 1988a; Covello et al. 1989b), including the popular media, health professionals, and peers (McCallum 1986). Risk communicators can reach workers through union and company publications, meetings, and training efforts that employ videos, print materials and classroom instruction (Callaghan 1989) or use networks to act as channels of two-way communication about risks (O'Riordan 1988).

5.4 MESSAGE

The content of the risk communication message is thought to be important because it is the major element of a risk communication program that a communicator can manipulate. Of course, this assumes that message content has an effect on recipient behavior and attitudes toward risk.

5.4.1 Material to Include in Message

There's no consensus about what material to include in a message on risk. Depending on the context, radically different recommendations can be found in the literature. Some suggest presenting both sides of an argument in a message, others only one side. Some argue to generalize the risk, protecting against arguments not specifically mentioned by opposition (Lee 1986). In other contexts it has been recommended to provide very specific and detailed information (Mileti and Sorensen 1988).

Risks do exist, they are being managed and we must learn to talk about them (Black 1989). One of the problems in CSEPP is that people want to avoid acknowledging that accident can occur. People want information that is certain and without ambiguity (Hamilton 1986). Often this is difficult in a program like CSEPP where there are great uncertainties. Communications on risks should include a discussion of what control measures and precautionary actions are being taken as well as what cannot be done (Covello et al. 1988). The message should help people understand uncertainties in warning systems and provide the reasons for false alarms (Covello et al. 1988a). Include in the message specific information on arrangements for evacuating or sheltering children, disabled people and other vulnerable populations and provide information on how to obtain updated disaster information (Covello et al. 1988a). Present recommendations in the context of a balanced argument that accurately describes the strengths and weaknesses of both sides (Covello et al. 1989). The language of warnings should be standardized to the extent possible (Gori and Hays 1987). Whenever possible, solutions and recommended actions should be provided with hazards and risk information as part of a warning message (Gori and Hays 1987). Also, be sensitive to the possibility of overloading people with too much information (Covello et al. 1989).

5.4.2 Promoting Understanding of Risk

Myriad warnings that surround everyone and often call attention to trivial or well-known risks tend to reduce the attention that is paid to warnings in general, thereby reducing their overall effectiveness (Green 1989). Dissenting groups are more likely to express concerns in a constructive manner when consideration is given to the social and political factors when developing a 'formula' for assessing risk (Pollak 1985).

One source of communication problems on health risks may be that the conceptual knowledge of the average reader might not be sufficient to integrate the risk information. For example, when information provided in pharmaceutical package inserts is written by

medical experts, the material is often inappropriate for the lay person's understanding of the effects of a drug (Jungermann et al. 1988).

Another source of miscommunication is when audience behaviors are at fundamental odds with those of health experts. For example, acknowledgment as well as acceptance of the fact that adolescents and young adults experiment with behaviors that carry a high risk of transmitting AIDS constitutes a key feature of planning programs on health risk reduction (Keeling 1987).

In a similar vein is the public's lack of understanding of probabilistic risk information. To assist people in understanding probabilities, compare a particular probability to events in the public's experience with other risks (1 per million compares to an individual's risk of being killed by lightening in a year) and/or use graphical representations (Kasperson and Kasperson No date). However risk comparisons should always be done between similar risks. In CSEPP comparing risks of storage to demil is a legitimate comparison. Comparing demil to smoking or driving an automobile are not good risk comparisons (see Table 5-1).

It is also important to note the impacts of the risk on vulnerable as well as 'average' people. Risks are not necessarily evenly distributed among different sub-groups of the population. The differences in vulnerability occurs for both scientific and social reasons. Elderly persons may be more susceptible because of impaired mobility, hearing, or sight. Social vulnerability may be hidden because certain groups or individuals are marginal to society or are politically powerless (Kasperson and Kasperson No date).

Communicators should be sensitive to the qualitative aspects of the risk. Experts and publics often evaluate risks very differently. Characteristics of a risk, such as newness, catastrophic potential, and familiarity with risk, are important qualities of risk assessment for the public. One of the more important criteria is whether a risk is voluntary or imposed (Kasperson and Kasperson No date). A condition in which risk comparisons may be useful is when the situation is not emotionally charged (Sandman 1987). Risk communications can be most effective when they reflect an understanding of what the public wants to know (Upton 1989).

5.4.3 Risk Measures

In many situations communicators cannot avoid using quantitative measures of risk. Identify and explain the strengths and limitations of different risk measures, and present (whenever possible) alternative measures and indices of risk (Covello et al., 1989).

Risk comparisons, although only part of the answer, should be fundamental component of any risk communication program (Covello et al. 1988:

Table 5-1 Risk Comparison for CSEPP

Comparing existing situation to a proposed action:

Expected Fatalities (EF) per year

- **Onsite risk per year (3 year ave) .00033 EF**
- **Storage risk per year .015 EF**

Storage is 45 x more risky

Probability Of Fatal Accident Per Year

- **Onsite risk per year (3 year ave) .00011**
- **Storage risk per year .000052**

Disposal accidents are twice as likely per year as storage accidents

<u>but</u> storage accidents cause 90x more fatalities

Comparing alternative ways of implementing the same action:

Effects of Mitigation

- **Storage:**
  Yearly risk of a fatal accident without mitigation .0026

  Yearly risk of a fatal accident with mitigation .000052

  or roughly 50 times less likely or safer with mitigation

- **Disposal:**
  Yearly risk of a fatal accident without mitigation .0024

  Yearly risk of a fatal accident with mitigation .00011

  or roughly 22 times safer with mitigation

Comparing sources of total risk:

What Munitions Create the Risk?

- **Storage:**
  99% of the storage risk is from accident involving bulk storage containers caused by an external event and
  1% is from all other munitions and causes (using EF measure)

Table 5-1 (continued)

- **Disposal:**
  50% of the risk from disposal activities is from accidents involving M55 Rockets and
  50% is from all other munitions (using EF measure)

There are few valid risk comparisons identified as yet in the CSEPP Program. The above examples are based on the risk analysis performed by Mitre and Oak Ridge National Laboratory for the Army's CSDP prior to the programmatic environmental impact statement on the CSDP. Remember that data can change when risk analyses are updated or actual operations data becomes available. These data are for program activities at all eight storage/demil sites. These examples are given to illustrate some of the ways risk comparisons can be done based on general guidelines developed by risk communication experts.

Source: adapted from Fraize, Cutler, and Flanagan (1989)

5b). It is important to avoid comparisons of risks that may appear to the audience to be non-comparable because of the different qualitative characteristics. For example, the risk of smoking compared to that of living near a nuclear power plant is not an appropriate risk comparison because they are not at all similar (Covello et al. 1989a).

It is recommended that risks be placed in perspective (Keeney and vonWinterfeldt 1986) by giving the best case as much attention as the worst. Presenting only the worst case does not serve the public; instead present the best case, the most likely case, and the worst case (Kasperson and Kasperson No date). Try to include all consequences that concern people. A hazard has both multiple causes and multiple effects. Thus, communication of risk needs to address a set of consequences rather than a single consequence measure of risk (Kasperson and Kasperson No date).

For example, consider the following table (Table 5-2) in which we compare disposal of chemical weapons with continued storage for 25 years using three different risk measures. The three measures are expected fatalities, probability of an accident that cause one or more fatalities, and maximum fatalities. Expected fatalities is the probability of an accident multiplied times the estimated fatalities from that accidents and summed for all accidents. Probability of a fatal accident is the sum of the probabilities of all accidents which are estimated to cause fatalities. Maximum fatalities is the estimated fatalities from

the largest accident under the meteorological conditions that will cause the largest exposure. If we use only one risk measure we get a different picture depending on the measure. For example if we look at maximum fatalities for the program overall, we see no significant differences in risk. If we use expected fatalities we see that continued storage is more risky.

Table 5-2 Comparison of Risks from Continued Storage and Onsite Disposal

Site	Riskier Alternative Based on 3 Risk Measures*			Perspective
	EF	PAF	MF	
APG	CS	CS	NSD	Continued Storage for 25 years clearly more risky than On Site Disposal
ANAD	CS	NSD	CS	Continued Storage for 25 years clearly more risky than On Site Disposal
LBAD	ND	ND	NSD	Continued Storage and On site Disposal have equivalent risks
NAAP	CS	NSD	CS	Continued Storage for 25 years clearly more risky than On Site Disposal
PBA	ND	NSD	NSD	Continued Storage is not significantly more risky than On Site Disposal
PUDA	ND	NSD	CS	Continued Storage for 25 years more risky than On Site Disposal
TEAD	CS	NSD	CS	Continued Storage for 25 years clearly more risky than On Site Disposal
UMDA	CS	NSD	CS	Continued Storage for 25 years clearly more risky than On Site Disposal
PROGRAM	CS	NSD	NSD	Continued Storage for 25 years more risky than On Site Disposal

***Codes:**
EF: Expected Fatalities,
PAF: Probability of an accident causing 1 or more fatalities
MF: Maximum number of fatalities
CS: Continued Storage
NSD No Significant Difference (CS is higher but not significantly)
ND: No Difference (CS and OS are equal)
OS: On Site Disposal
Source: CSDP Final Programmatic Environmental Impact Statement

5.4.4 Scientific and Technological Messages

Messages on risks must address the problems citizens have in processing scientific information. The information presented must simultaneously acknowledge scientific uncertainties, perhaps through such means as presenting data in different numerical or pictorial ways (Jasanoff 1988). Conveying technical risk information from experts to lay public is unlikely to be successful unless social context (i.e., social networks, economic resources, political right and responsibilities, histories and ideologies) of such messages is addressed (Johnson 1987).

Technical information often does not play a dominant role in a risk communication controversy (Krimsky and Plough 1988). In explaining risk to non-experts, risk information may have to be simplified (Sandman 1987). The dilemma is that simplification can also undermine the credibility and accuracy of the information. It is recommended that technical studies be accompanied with non-technical executive summaries so that assumptions and methods are clear to all readers (Konheim 1988). When there is an action message or something that people can do to protect themselves, communicators should be especially clear and persuasive about that component (Mason 1989). Sometimes this dilemma undermines agency effectiveness. Until an agency like the EPA learns to manage both the regulatory (macro-risk) role and the public information (micro-risk) role the agency will continue to confront crisis after crisis (Sharlin 1986).

5.4.5 Framing Messages

People adopt a reference point from which outcomes or choices are seen as positive or negative, but this reference point is influenced by how the choice is presented or described (Lichtenberg and MacLean 1988: 38). The principal task for regulatory agencies and academia is presenting risk information to public to overcome the "no risk" mentality (Long 1988). The more a communicator manages to avoid the mask of an institutional spokesperson and the more he or she can express compassion and empathy for the audience, the more likely the audience will identify with the speaker and feel compelled to agree with the argument (Renn and Levine 1988).

The quality of message depends on good science with information clearly and accurately presented (Mason 1989). Factors which should be incorporated in risk communication efforts should encourage individual health protection by personalizing the message enough to provide a framework for individual action (Needleman 1987). This helps to avoid ritualism and to minimize overreaction.

In CSEPP it is a major challenge to frame the risks. Clearly the public wants a no risk situation, but that is technologically infeasible. Media coverage of demil activities has painted a very negative image of a complex technology. This has had a detrimental affect on achieving the CSEPP goal of public protection.

5.4.6 Message Style

The style of the communicator as well as the communications process will likely affect how the risk is determined by the audience. Although this concept is relatively simple, it is much more difficult to adjust than most communicators are willing to admit. Five elements of style seem to be important in an emergency message: specificity, consistency, accuracy, certainty and clarity (Mileti and Sorensen 1990; Vogt and Sorensen 1992).

5.4.6.1 Specificity

Hazard notification messages should be very specific. Specifically recommending hazard mitigation measures, stating the precise character of the hazard, and indicating how much time the respondents have to engage in protective actions, results in prompt reaction by the community and the execution of the appropriate protective measures. The content of the hazard notification message must be very specific in this regard. On those occasions in which specificity on all content items cannot be detailed (because details are unknown or only known approximately), the warning message itself and the style with which it is written must still remain as specific as possible. For example, the message could state: "We do not know nor can it be known which buildings in the city are the safest for sheltering, but we do know that most everyone will be protected if they shelter inside buildings and do not attempt to evacuate to outside areas."

5.4.6.2 Consistency

Hazard notification messages must also be consistent, both within a single message and across different messages. Messages should also be consistent in describing the actions being taken. For example, a message telling respondents to remain indoors and await further information is of little help if the respondents observe that families of community emergency personnel are leaving their residences. It is important to avoid any inconsistencies across different messages. As the crisis progresses and more is learned about the potential hazard(s), hazard notification updates should be issued. These updated

notification messages in turn must be consistent with the previous notification messages. Consistency can be rendered across notification messages by referencing and/or repeating the information in the previous message(s), by clearly stating the additional information on the hazard(s), and by pointing out the changes from the previous messages along with a brief explanation for the basis in such changes.

5.4.6.3 Certainty

Hazard notification messages should be written with as much certainty as possible, even in circumstances in which there is ambiguity associated with the chemical accident's impact on the community. Where there are low probabilities or ambiguities associated with a hazard's impact, the message should be stated with certainty, even when discussing the ambiguity. For example, the message could say: "There is no way for us to know if there really is going to be an explosion in the plant, but we have decided to recommend that everyone in the Immediate Response Zone (IRZ) be evacuated now; everyone should act as if the explosion is a real threat."

Certainty in warning messages, however, extends beyond the actual message content. Certainty also includes the style with which the message is delivered to a public. The warning messages should be read by spokespersons in a tone of firm belief that convey the impression that he/she believes they are certain about what is being said in the message.

5.4.6.4 Clarity

Hazard notification messages must be worded in a language that can be understood by all respondents. Avoid the use of complex scientific or engineering terminology. For example, describing an accident as "a release of sarin due to a unplanned detonation of munitions in the primary combustion chamber of the dunnage furnace which subsequently caused a loss of pressure and a breach of containment" should be phrased in more understandable terms. Greater understanding would be conveyed by stating: "An exploding shell in an incinerator caused a vapor cloud of nerve agent to be released at the incineration plant."

5.4.6.5 Accuracy

Every hazard notification message should contain timely and accurate information. If the respondents in a community suspect that they are not receiving the "whole truth" about the chemical accident, people who are at risk may not believe the advice contained in the messages and refrain from taking the appropriate emergency protective actions.

5.4.7 Evaluate Messages

It is important to understand how messages are being interpreted by the public. Confirm that people understand the precise nature of different warning signals and their meanings (Covello et al. 1988a). At various points in a communication program assess community wants and needs as well as information already in the community, pretest informational materials, determine public response to public meetings, track media coverage, and identify public reaction to overall programs (Pavlova and Luftig No date). Focus group discussions are especially useful to gather information about public perceptions. Researchers also need to examine the complex intermix of mass media communications and interpersonal communications in the receipt and use of warning messages (Quarantelli 1989). Better ways are needed to convey quantitative risk information, in researching how framing of messages affects risk communications, and in testing messages (Slovic 1986).

Table 5-3 provides a tool to evaluate the text of risk communication with respect to style and content:

Table 5-3 Message Evaluation Matrix

Style			Content		
	Hazard	Location	Guidance	Time	Source
Specificity					
Consistency					
Accuracy					
Certainty					
Clarity					

5.5 TIMING

Timing is a critical aspect of the risk communications process in both emergencies and during pre-emergency communication effort. In CSEPP timing is certainly important in an accident as very little time exists to provide a warning. In other situations timing is also important. Several historical events in CSEPP underscore this issue. When a week elapses before disclosure of a leak, it may be difficult for the responsible party to retain credibility.

One of the continuing controversies throughout the literature is when to release data to the public, especially if data are suspect or uncertain. CSEPP abounds with uncertain information, including the size of potential accidents, their probability, and areas they could affect. Some advocate immediately releasing all data to the public (Marshall 1989). Thus the public can be involved from the very beginning, even when hazard is only suspected, and the agency can focus on control, not reaction (Hance et al. 1988). Open, accurate, and timely communication of environmental risk information is essential to the mission of public health and safety agencies (Ozonoff and Bowden 1987).

Others suggest a more circumspect criterion for release of information. For example, if people are at risk, communicate immediately; if there is potential risk, communicate to unaware people and release information before media outlets do (Hance et al. 1988). If the data appear untrustworthy, discuss procedures of how the data were obtained, not the data; if the data show a problem, release and discuss the tentativeness of the data (Hance et al. 1988). In addition, release information when risk management options are tentative; release information at once but tell the public why; and use quality assurance rationale only if needed--above all, say something, don't remain silent (Hance et al. 1988). Except for trade secrets, information supplied to the employee should be freely available not only to those entitled but to anyone else who needs information (Brower 1986).

The main recommendation is that messages be disseminated as early as possible through channels that will reach the public (Mason 1989). If information is put out through an agency's own initiative and its terms, the results are usually good; bad stories result from leaks or from sources with special axes to grind (Mason 1989). To reduce negative impact, hazard information should be launched immediately after a local occurrence of a hazard. After such an occurrence, the report of the event will increase the salience of the hazard and the hazard information may have more positive impacts on public adoption of safety measures (McKay 1984).

5.6 AUDIENCE

It is important to identify and understand the different types of audience participants. Identifying audiences is no more than thinking through very specifically who might want to be talking to you (Hance et al. 1990). Although boundaries may well overlap, five categories are basic: emergency responders, commentators from both private and public sectors, those with special needs to know, the news media, and the general public (local, regional, national, international) (Bell 1989).

Decide on how to best target the information to different audiences. FEMA (1985) recommends that officials target information to the educational level of the majority of those in the area at risk or if the level is unknown, to a 7–9 grade reading level. It is recommended to translate information into a foreign language if the foreign language speaking population of age 21 or older equals 5% of population. Handicapped or disabled persons must have information in a format that meets their specific needs. Thus an oral briefing to visually impaired may be necessary to communicate risk information. One way to assess who in the planning area requires special communication efforts is to provide a self-identification card in general public information material that can be returned to emergency officials.

The material on risk must be carefully tailored to different sectors of society (Long 1988) and take into account the previous knowledge and experience of the audience about risk issues (Cannel and Otway 1988). To determine the suitability of the material, try to determine the attitudes held by public at large before designing appropriate communications (Lee 1986). Information to be communicated must fit into the frameworks of the receivers because they will interpret the information according to those frameworks (Mitchell 1986).

Receiver problems sometimes consist not of finding out why the public is appearing to behave irrationally, but in finding out what political positions have been staked out and how those positions relate to public attitudes (Mitchell 1986). A prime example is the siting of nuclear power plants. The degree to which the nuclear hazard issue is embedded in value systems and political debates makes it an extreme case for risk communicators and any attempts to communicate technical information regarding nuclear power must take into account the existing individual frameworks for interpreting information (Mitchell 1986). In Tauton, Massachusetts, officials' experience in siting a hazardous waste processing plant also made it clear that no matter how good or how long the communication

process was, the local community must have adequate information to participate effectively in the negotiation process (Kauffman 1986). Good practices include fully informing the public from the outset (Lagadec 1987) so that what people care about is making good decisions (Fischoff 1987).

Risk communication activities are, by design and intent, a social intervention which have impacts on people exposed to the information. The communication can change people's perceptions and behaviors. In some cases the impacts are intended, in other instances, unintentional. For example, in the CSEPP one is always hearing someone say "we can't tell (or show) the public that--they will be frightened." What the research shows is that the public should be given as much information as possible without communicators' prejudging the public's reaction. Indeed, negative effects can result from a poorly designed as well as a good risk communication program, but negative results are less likely if thought and skill have been integrated into the risk communication program.

5.6.1 Impacts on Public Perception of Risk

Public perceptions of risk do not always correspond to expert rankings. Allen (1987) found the EPA task force rankings of high risk problems did not correspond well with EPA's current risk mitigation program priorities but did correspond closely to public opinion. The researcher divided up the universe of environmental problems into 31 categories and compared the ranking to data from Roper polls collected between 1984 and 1986 on 20 categories. The high/low combinations of outrage and hazard issues presented the most complex problems indicating the public takes a more personal view of risk than EPA's macro perspective in determining resource allocation in risk assessments.

Cvetkovich and Earle (no date) conducted a three panel telephone survey on multiple expectations of risk. A confirmatory factor analysis showed that multiple indicators of hazard, risk, benefit, cost, and environmental impacts, did not converge into a single concept. Measures of risk, including mortality, morbidity and loss were not related to information seeking or acquisition of mitigation knowledge. On the other hand, factors such as education, length or residence, and attitude toward technology/science were significantly related to information seeking or to acquisition of mitigation knowledge. Attitudes toward governmental desire to control hazard, and desire to communicate with the public were significantly related to information seeking or acquisition of mitigation knowledge.

Earle and Cvetkovich's (no date) study involved three surveys comparing risk perceptions from earthquake with that of water pollution. They found respondents felt that

scientists and technical experts serve the public well in regard to general hazard management. Respondents also felt that government officials have not done a good job of hazard management. The earthquake hazard was most frequently experienced and feared, but the least frequently discussed.

In a comparison of the risk perceptions from earthquakes with those from water pollution, Earle and Cvetkovich (no date) found that respondents considered earthquakes more understood by scientists than water pollution. Individuals, however, understand more about water pollution than earthquakes. Earthquakes were associated more with economic benefits than non-economic benefits. Information on earthquakes was received more through the media than through personal conversations. Water pollution was judged to be a more serious risk than earthquakes in terms of likelihood of injury/illness, level of concern, and to require personal activities to reduce risk. Earthquake hazards were not found to be personally salient.

Fessenden-Raden et al. (1987) examined factors influencing public understanding of risk information involving chemical contamination of water supply. Two sets of factors appear to underlie intercommunity variability: components involved in the discovery of the problem and in the initial response of officials and the contextual aspects of the local community. This study's main finding is that people's perceptions of risk were affected by their perceptions of the way in which the risk was handled over time. The receiver-oriented focus on risk communication suggested that reception of information about risk will vary between communities, among various publics within a community, and over time. Secondly, receivers bring cultural assumptions and inputs of individual knowledge and experience to the communication interaction. Moreover, while many messages, both official and unofficial, are involved in presenting information to the public about a given risk, lack of training among participants may compound the problems of translating, conveying and understanding the risk. Thus risk communication involves the dissemination of many risk messages.

Grunig (1987) examined the role of public reactions in dealing with an industrial crisis at a wood processing plant. The study found using a press agent and the public information approach (the one-way communication approach) was unsuccessful for dealing with the citizen groups concerned with waste disposal practices. Instead a two-way symmetrical approach that gathers and disseminates information encourages cooperation.

Perry and Lindell (1989) studied credibility based on past experience and access to information about the volcanic hazard from Mt. St. Helens on two communities. They found that during the emergency response phase of impending threat citizens are more likely to comply promptly with warning messages from sources perceived to be credible.

Secondly, during non-emergency times when environmental dangers are present but not imminent, citizens attend more carefully to information and preparation suggestions disseminated by credible sources. Two dimensions that enhance credibility are past experience and access to skills and information. The results emphasize the diversity of citizen channel preference thus underscoring the importance of using multiple channels in disseminating threat information. Data show citizens do rely on, and some cases prefer, media for all types of hazard information.

Research on five natural disasters by Sood et al. (1987) illustrates how media personnel and local officials often cooperate but sometimes conflict in accomplishing their respective goals and how this process affects the public's understanding of the disaster event. Examples of the process defining an event as a disaster demonstrates the importance of considering the interaction of many key actors in news coverage. Technological disasters present different types of questions about the media's power to define an event. For example, although public reactions to most technological disaster is negative, Miller (1987) found that the "immediate impact of the Challenger accident was to stimulate a wave of positive attitudes (on the part of the public) toward the space program and toward funding it. This finding suggest that a typology of effect from disaster should take into account the perceived extent of personal risk.

5.6.2 Differences in Perceptions of Risk

Dutton (1987) examined how the perception of information on prescription drugs differs between experts and the public. The study found that people are more likely to exaggerate the perceived likelihood of events they consider particularly undesirable and to minimize the likelihood of events of little concern. Perceptions of risk differ between experts in a given field and from nonexperts. Experts are more likely to define issues in the narrow and technical terms of their own specialty and to ignore related nontechnical problems. Other studies have shown that the poorer the data and less rigorous the evaluation, the more exaggerated the claimed benefits tend to be. Experts tend to more optimistic about benefits and less worried about unknown risks, particularly human errors, than nonexperts.

Wertz and Fletcher's (1987) two studies on genetic risks found that disclosures were differently interpreted by experts and families. Almost 97% of geneticists responding worldwide would fully disclose all information about scientific uncertainty, with the exception of a colleague's disagreements. Geneticists in the U.S. and Canada were more willing to disclose colleague disagreements than they were in Great Britain. Almost 96% of

geneticists indicated that they would not tell the husband if the wife requested that he not be told if he was not the father of the child. Clients were most likely to learn medical information in sessions where both counselor and client had become aware of what the other most wanted to discuss. While counselors were satisfied with 95% of the sessions, patients understood their risk in fewer than half of the sessions.

Gender differences in hypothetical directed situations were also studied in discussion of genetic risks. Women geneticists were more likely to disclose when unasked, and also more likely to disclose to relatives at risk. Male geneticists were more likely than female geneticists to tell patients what they would do in the patient's situation or to tell them what they ought to do. Given the gender differences, patients might be well advised to seek information from counselors of both sexes. Patients were more likely to interpret a particular numeric risk as higher if they had a living affected child living at home, if the disorder in question caused intellectual impairment, and if they thought that their risk was high before counseling. They were more likely to interpret their risk as higher if they discussed, in counseling, the effects of an affected child on the parent's relationships with their normal children and whether or not they should have another child.

5.6.3 Public Education and Response

Several studies have investigated the impacts of hazard awareness programs on people's knowledge about a hazard, their perception of risk, and on the adoption of mitigation measures. The first attempt to do so was a study by Roder (1961) who distributed flood plain maps to resident of Topeka, Kansas. The study found that the maps had no effect on people's awareness of the flood hazard or knowledge of flood problems.

Bolton's (1987) findings from the final report on the dissemination of earthquake information in three trial programs suggested that messages on hazards disseminated through many different channels at once are effective in gaining attention and interest. The study found that initial enthusiasm was a necessary but not sufficient condition for having a successful school program. A combination of teaching earthquake science and safety protection program reduced anxiety among school children.

The results of surveys conduced by Johnson and Fisher (1989) during the summer of 1986 on information learned from brochures on radon risk indicated that the way in which information on health risks was presented had a measurable impact depending on the measure of effectiveness used. Quantitative information treatments were statistically significant in reducing discrepancies between objective and perceived risk. While results confirm that conventional wisdom that personal characteristics influence risk perception,

the results do not suggest that such characteristics can identify target "publics" for particular risk information program. No information treatment was superior for all tasks. Neither was there a single set of personal characteristics that identified a groups with a clearly defined set of perceptual problems. Different personal characteristics were important for different perceptual tasks.

Johnson and Luken's (1987) study on radon risk examined the perceived risks and mitigating behavior of Maine householders who received new information on their exposures to significant health risks from indoor levels of radon. Despite the involvement of well-motivated homeowners and well-intentioned researchers and government officials, the authors conclude that the risk information approach failed to induce appropriate, cost-effective voluntary protection. The results indicate that the information of risk perceptions and subsequent behavioral adjustments involve complex interactions among information, contextual, socioeconomic, and psychological variables. Thus governments that seek to educate rather than regulate must do so carefully.

Smith et al.'s (1988) survey of brochure use for radon information shows success varied with the format presented to the 2300 homeowners involved. The different designs of four brochures employed provided experimental control of materials presented to householders in the radon measurement study. The findings indicate that learning was systematically related to what and how information was presented. As expected, education was a significant determinant of learning while age again exhibited a negative influence on the prospects of learning. It seems clear that the success of an information program depends, in part, on the format of the material presented. Framing effects related to the presentation of risk information were similar to those observed in contingent valuation studies. Most important, the findings indicate that learning about risk is a systematic process.

Roesner and Russell's (1987) report on the analysis of emergency plans for nuclear power plants in California questioned the assumptions about who should be included in learning about nuclear risks. Specifically, the study was concerned with the program goals and who should be educated and who should be responsible for developing and evaluating the program (suggests the government, not just the utilities and FEMA). The study also suggested adding both citizens and social scientists to the emergency planning committee.

Palm (1981) evaluated the effects of the 1977 Alquist-Priolo Act disclosure requirement which specifies disclosure of earthquake hazard information by realtors. The research sought to determine whether the presence of special zones delineating areas of high earthquake risk and the mandatory disclosure of this information to home buyers affected people's adoption of earthquake mitigation measures or had an effect on house

prices. Three surveys were conducted with recent home buyers, real estate agents were interviewed, and an analysis of hedonic price indexes were conducted. The homeowners in the evaluation included a group within the special zone, a group near the zones, and a subgroup of the first group who were particularly knowledgeable about the zones.

The results indicated that the disclosure had little impact on buyers or on housing prices. Few purchasers indicated that earthquake risk disclosure played a role in the decision to purchase. Many were not aware of the high risk zones even if they resided within them. No differences between groups was found regarding adoption of protective actions. Furthermore, prices had not been negatively affected by disclosures.

Several problems exist, however, with the study. First, any people who were affected by the disclosure and chose to locate away from earthquake risk were not identified and included in the study. This makes it impossible to infer the program has no impact. Second, the study is vulnerable to possible response bias. People may have downplayed the role of the hazard disclosure process in order to avoid admitting a "poor" decision. Furthermore, since the disclosure is made at the time of closing, and motivation to ignore new information when a decision has been made may be particularly strong, but the same information may have a much greater impact if provided earlier. Despite such issues, the research does suggest that some changes in the program are probably needed.

Ruch and Christensen (1980) attempted to assess the effectiveness of a hurricane awareness program. Findings were based on interviews with a randomly selected group for 381 households in Galveston, Texas. Three methods of information dissemination were involved: a checklist/map brochure, five-minute radio spots, and television ads and feature programs. Subjects were divided into four groups: one with no recall and three others, each composed of individuals remembering only one of the above program elements.

The results suggest that the brochure increased knowledge but decreased perceptions of risk. Television had no significant effects. Radio slightly decreased risk perceptions. The results suggest that written information is more effective than electronic media in education, but that all may have counterproductive impacts. Nevertheless, the questionable equating of program recall with programs exposure seriously undermines our confidences in these conclusions.

Waterstone (1978) conducted a study of the hazard mitigation behavior of flood plain residents in Denver, Colorado. A major goal was to assess the effectiveness of an informational brochure. The evaluation used three groups of subjects from two areas similar in risk. Group 1 had received the brochure twice prior to the interview. Group 2 had not yet received the brochure. Group 3, from the same area as Group 2, had recently received the brochure.

Telephone surveys were conducted with 249 residents to ascertain the effectiveness of the brochure as well as to measure a number of other relevant variables postulated to affect protective behavior. Results indicated that people who remembered receiving the brochure were more knowledgeable about floods and were more concerned about flooding than those who had not. Furthermore, the brochure seemed to have increased awareness and interest in flood problems and encouraged adoption of family contingency plans. Since people who remembered the brochure are more likely to have been concerned initially, conclusions about brochure effects based on brochure recall are questionable.

Haas and Trainer (1974) attempted to evaluate the effectiveness of a tsunami hazard public education efforts in four Alaskan communities. Three education programs were implemented and one community was utilized as a control. The programs used mass-media, a mail-out brochure or personal contact. Pre- and post-measurements were employed to measure various perceptions and knowledge about tsunamis and emergency response. The post-test, conducted 4.5 months after the completion of education efforts, showed minimal effects. No significant changes were observed in what people knew about tsunamis, how reliable they felt the warning system was, or in intended behavior in response to a warning. The mass media and personal contact approaches did elevate perception of the severity of local tsunami threat.

Baumann (1983) describes a project designed to identify cost-effective programs. As part of the research, three programs were designed to provide information to the public, differing as to the amount of information involved. The evaluation included four groups of people selected from flood-prone areas in the three program communities, plus a control group. The communities were matched according to demographic characteristics and flood risks and subjects were randomly chosen.

The results indicated that the information programs elevated awareness of flood problems. Furthermore, in comparison to the control group, program groups reported more activities to reduce flood losses. Of major significance, however, was the finding that each program had about the same impact. Amount of information had no detectable effects. No attempt was made to examine the duration of effects, which might have been sensitive to the differences among the information programs.

Some anecdotal evidence of the effects of educational programs exists. Foster (1980) reported a case where a school bus driver was confronted by a tornado and did not know what to do. An education program on tornadoes in the school enabled a student to remember the correct action. The driver followed the advice of the recently informed student to pull over and let everyone on the bus get into a ditch. The bus was subsequently

destroyed but all passengers were saved because they acted in a manner that maximized their chance of survival.

5.6.4 Personification of Risk by Recipients

Probably one of the major recommendations in the literature is that audiences should not be viewed as static entities. Research on emergency warnings suggests that communicators should be attuned to the dynamic social presses involved in communications. For example, once a warning is heard, understood and believed, the warnings must be personalized by those at risk (Sorensen and Mileti 1987). A number of factors influence interpretations of warning messages. Receiver determinants include environmental cues, proximity, social networks, level of resources, role membership, socio-economic status, age, sex, cultural aspects (such as membership in a minority group), psychological attributes (such as knowledge, cognitions and hazard experience) or may be constrained by physiological problems. All process determinants (hearing, understanding, believing and personalizing) also influence response. Communicators should plan that the most likely initial warning response is to seek to confirm the original warning message received (Sorensen and Mileti 1987).

5.6.5 Impacts of Public Communication of Risks

Gori and Hayes (1987) presented results of a USGS workshop concerning dissemination for public information on uncertain geologic risks, and concluded that communicating information on risks was an on-going activity. Communication is a process, not a single act, involving federal, state and local interaction. How the USGS communicates information about geologic hazards may be considered as important or even more important in averting disaster than the direct assessment and monitoring of geologic hazards.

Blair (1987) analyzed the response to the volcanic risk issued by the USGS for the Mammoth Lake area in California. Four negative effects were identified from the notice: town officials and business people in Mammoth Lakes believe the economy was adversely impacted by the notice; that the method of release put public officials on defensive (local officials learned of the notice from an article in the Los Angeles Times); that the press coverage exaggerated the hazard; and that the risk was inadequately defined for decisive public action. Positive aspects included public recognition of the volcanic notice, instituting a USGS workshop that effectively communicated to the community what was known about the risk, construction of an evacuation route from Mammoth Lakes, preparation of a state

emergency plan for response to the threat, and improvement of some land use plans. Although the USGS notice had been cautiously worded to convey a high degree of uncertainty about all aspects of the situation, the notice was greeted with anxiety and sometimes exaggerated public reaction. Local officials and business people saw the notice as a direct threat to the local economy, rather than as a warning about the possibility of a volcanic eruption.

Browning (1988), reporting on the Challenger explosion, found that members of NASA before the accident and the Presidential Commission following the accident acted in different ways to protect the survival of NASA as a viable agency. The strategies of protection centered on blaming individuals at lower levels of NASA and to fix blame on communications failure (a technical problem) rather than blaming leadership of NASA (an institutional problem). They concluded the type of accident determines the risk for decision makers, but only in retrospect.

Hance et al. (1988) conducted 50 interviews about successful risk communications with experts and agency personnel from both the public and private sectors. Enhancing trust and credibility were critical for agency practitioners in dealing with the public. They found program effectiveness to increase when the following practices were used: involving the public from the beginning, being aware of the "outrage factor" of public concerns, being consistent, having articulate personnel sensitive to public's needs as communicators, communicating risks through personalization and comparisons to similar situations and substances, not confusing acceptability of risk with understanding of risk, admitting uncertainty, and educating the public through involvement in the process.

Hilgartner and Nelkin's (1988) study included reviews of four case studies on dietary risks. The debates in these cases centered on questions of the strength of technical evidence, the reliability of public statements, the dangers promoting "undue" alarm or anxiety, and on the public's right-to-know. The findings suggested that technical issues often served as surrogates for skirting the more contentious issues of political and social control of risk communication.

Johnson and Fisher (1989) conducted surveys during the summer of 1986 to measure information learned from brochures on radon risk distributed to the public. The methods used to inform about the health risks had a measurable impact on recipient's resulting risk perception, depending on the measure of effectiveness used. Quantitative information treatments were statistically significant in reducing discrepancies between objective and perceived risks. While results confirm conventional wisdom that personnel characteristics influence risk perception, the results do not suggest that such characteristics can identify target "publics" for particular risk information programs. No

information treatment was superior for all tasks. Neither was there a single set of personal characteristics that identified a group with a clearly defined set of perceptual problems. Different personal characteristics were important for different perceptual tasks.

McCallum (1986) concluded that the cardiovascular disease was reduced in the United States through a program that utilized coalitions and networks that sent complementary messages, promoting a synergistic effect on recipients. The effect was fostered through local and national involvement, using multiple communication channels that provided daily messages for continuing reinforcement of the message.

Kauffman (1986) studied the Tauton, Massachusetts, proposal for a hazardous waste site. The findings suggest the inability of the government to overcome public fears and uncertainties about certain complex technologies stemmed from the public's distrust that perceives government to have a hidden agenda. A second problem was asking the local community to serve regional, and even national needs. Third, compensation was a thorny area of communication with compensation regarded as a bribe. Findings from the Tauton experience suggest that no matter how good or long the communication process is, the local community must have all the necessary information to participate effectively in the negotiation process.

Five case studies researched by Krimsky and Plough's (1988) suggest the importance of visible and independent scientific validation of technical decisions supporting official risk communications. The study found that one of the common mistakes in attempting to understand public attitudes about risk was to measure people's responses to hypothetical questions.

Ruckelshaus (1987), reviewing past EPA actions in the Seattle ASARCO closure, concluded that the public must have access to the decision maker early on and be given honest and complete information to make an informed decision. At that point the public must take responsibility for the decision. The "task is to elicit from people a response that is both sensible and consistent with their own interests" (Ruckelshaus 1987).

Schulte's (1989) studies found that individual notification of workers to a past chemical exposure did not have satisfactory outcomes in light of the health agency's goals of stimulating additional medical screening. The primary lesson was that a single notification letter was not enough to stimulate worker action. Three barriers to individual notification are: (1) epidemiological risk information was not made group specific, so that the experience of one group could not be compared to another; (2) in many of the mortality studies estimates were based on deceased who may have had greater exposure than the notified workers; and (3) workers questioned the truth of the study findings. Individual

notification procedures for risk factors should be based on a firm scientific foundation and reflect the relative importance of the risk to the individual.

5.6.6 Education of Publics about Risks to Induce Action

The issue of how risk communications eventually influence individual behavior has been raised. Researchers have had difficulty linking public education efforts with actual behavioral changes. Despite the involvement of well-motivated homeowners, well-intentioned researchers, and government officials in one study in Maine, the risk information/education approach failed to induce appropriate, cost-effective voluntary protection regarding individual homeowner risk from radon (Johnson and Luken 1987). Instead the results indicate that the formation of risk perceptions and subsequent behavioral adjustments involve complex interactions among informational, contextual, socioeconomic, and psychological variables. "Governments that seek to educate rather than regulate public on risks must do so carefully," note Johnson and Luken.

Other research on the benefits of education has had more favorable results. The final report evaluating FEMA-sponsored programs to raise community awareness of earthquake hazard initiated in three earthquake prone areas (Seattle, Memphis, and Charleston) included a number of methods to enhance public awareness (Bolton 1987). The report compared the various strategies used in the school earthquake education and safety and the community outreach programs, described activities and approaches tested in the three projects, and the accomplishments of the projects in disseminating earthquake hazard and preparedness information. "By being sensitive to the constraints and concerns that teachers and principals face, the earthquake project can foster the enthusiasm that can eventually lead to widespread involvement and significant risk reduction" (Bolton 1987). The combination of earthquake science and protective actions in one educational program reduced anxiety about the earthquake hazard among primary school children.

This chapter has presented risk communication as a social process. It has gleaned information from actual studies in risk communication research that have enabled the design of other risk communication programs. The studies did not address strategies and practices to use when confronted with a particular issue or problem. That is the topic of the next chapter.

6. RISK COMMUNICATION STRATEGIES

6.1 PROGRAM DESIGN

In this section we attempt to bring together recommendations for risk communication practices and organize them as communication strategies. We are not advocating every practice that is recommended as many are largely subjective and situation-specific. These are meant to stimulate your thinking about how to deal with a particular problem. As Jasanoff (1988) notes:

> **"In a world which can produce such risk 'communications,' a simple emphasis on how to transfer technical information to lay people should not be lightly dismissed. What is at stake is what institutions and society should do, and messages ignoring this are unlikely to convey conviction."**

6.1.1 Design Principles

It is important to design an integrated risk communication program. Before a program is initiated, establish a working team with authority for resolving problems; identify who will be responsible for addressing the public's questions and who has responsibility for each of the program's components (Pavlova and Luftig No date). Repetition and frequency are two very important components of timing that deserve careful consideration. A graphic representation of the long-term process (e.g., a timeline) should be published repeatedly throughout the program. Communications should be frequent so as to give the perception that government is an effective structure for responding to the community's concerns (Pavlova and Luftig No date). Conclusions should be made explicit and vested interests should not only be admitted, but justified in terms of public mandate or economic function (Renn and Levin 1988). In the CSEPP it is important to remind people that the incentive for disposal came from congressional mandate and not the agencies involved in the CSEPP.

In establishing a risk communication program, careful attention should be given to start-up tasks before dissemination activities start to consume staff's time. New projects should be careful about obtaining too much publicity before agencies are really prepared to begin providing information or offering well-developed presentations (Bolton 1987).

6.1.2 Preparation for Risk Communication

One reason that risk communication efforts often fail is lack of preparation. For example, even simple mechanical factors, such as having to prepare material quickly for short deadlines can constrain risk reporting (Peltu 1988). It is recommended that communicators inform all agencies potentially affected by another agency's actions and communicate routinely as a means of avoiding misunderstandings (Chess 1987).

Plan carefully before communicating by developing clear and explicit objectives which address multiple audiences. Determine the objectives of the plan prior to its development. Alternative objectives are to educate, to build credibility, or to reduce conflict (Bell 1989). Once the types of risks to an organization are analyzed, they should be prioritized to provide a list of potential concerns (Bell 1989). When establishing a risk communication program, it is important to plan for what type of information needs to be collected to document program implementation. For example, maintaining a daily log of documents may be needed for obtaining further funding or to defend credibility. In the CSEPP, documenting when and where monies were used to improve communication coverage (i.e., sirens or tone alert radios) is helpful in promoting agency credibility.

Preparation takes many forms. For example, in SARA Title III programs, communities must first identify the chemicals most likely to cause concern and contact plant managers in their area. Officials then need to obtain toxicity and exposure information on reported chemicals and associated risks, especially about personal health. To identify perceptions and concerns of the community, it is helpful to initiate a baseline study of the community's "chemical risk" awareness (American Chemical 1988).

It's helpful to determine in advance what specific questions will be asked by the public about risks in the community, such as "Is it safe to drink the water?" or "Can I let my livestock graze near the depot?" Plans should also include a policy statement for emergency public information (PI) plans and a selected staff to serve as a PI team prior to an event (Bell 1989). It is important to specify program goals, rationale, physical features, and desired actions (Diggs 1988). Agencies should discuss plans openly instead of waiting to release results of an investigation (Chess and Hance 1989). Furthermore, it is important to maintain flexibility and to adjust to community dynamics during program implementation (Morgan and Vlek 1988). Communicators will be better prepared when, prior to final production, messages are pretested with target audiences (and in some cases with channel "gatekeepers") to ensure public understanding and to achieve intended responses (Arkin 1989).

6.1.3 Social Factors in Program Design

Effective programs are based on understanding and incorporating local social factors into the program design. The social dimensions of routine decision making and communication should allow negotiation between experts and the public to determine the appropriate levels of uncertainty in each particular case and to allow for intercultural understanding about expectations for knowledge or information (Wynne 1988). For example, in developing a dialogue between scientists and farmers after the Chernobyl accident, researchers found that a less centralized organization of scientific expertise would have aided the two-way information exchange as well as negotiation of what was expected from the scientific community (Wynne 1988).

Social factors are important in developing individual perceptions of risk. For example, if communication of information on genetic health risks is intended to form an effective basis for reproductive decisions, it must not only reach both spouses but must be interpreted in similar fashion by both (Wertz 1989). Patients must be encouraged to think independently and critically and transcend the passivity implied by the term "consent" by becoming full-fledged partners in the therapeutic process (Dutton 1987).

6.1.4 Role of Public Information Offices in a Program

Dunwoody and Ryan's (1983) research on the utilization of information offices by scientists within organizations found support for two propositions: (1) the PI component had something of a marginal status within the organization and (2) PI personnel within an organization did not utilize all scientists within an organization equally. Rather, PI personnel tend to interact with few individual scientists, most likely those who are older, prominent and more organizationally powerful than others. The study found that over half (52%) of the scientists that responded agreed that scientists are responsible for making research findings available to colleagues. Ninety-seven percent agreed that it is important for researchers to learn to communicate with nonscientists, and 72% agreed strongly that researchers should be free to deal with the popular media. Although 66% of respondents agreed that PI personnel sometimes hindered scientists who want to be completely open with their research efforts, 72% indicated that PI staffs generally make it easier for scientists to deal with journalists. Only 15% agreed that it would be a good idea to dismantle PI staffs and allow scientists to deal directly with journalists. Almost all (93%) of the sample agreed that most scientific training does not teach those in scientific endeavors to deal with the media. While 72% of sample said no media contacts were initiated through

their PI offices, 87% noted that 25% to 100% of their journalistic contacts were initiated through journalists. These findings agree with other studies that scientists apparently want PI persons around but don't view them as integral to their activities with the media.

Goldman's (1986) review of nuclear utility responses to emergency events found most events were classified by the companies as "unusual events" or "alerts" with one classified as a "site area emergency." Although none of the events posed a public hazard, each posed a threat to the credibility of the utility when the event was reported. The public response demonstrated that (1) media response to a nuclear power plant accident is not necessarily related to the technical severity of the accident, and (2) utilities must have in place effective and coordinated emergency PI program, particularly for "lower level" emergency classifications. These findings indicate that risk communication programs for the CSEPP should include prepared statements for events which are not critical but which may cause citizens to have some concern about their safety.

6.1.5 Establish Rumor Control

Rumors can undermine the credibility of any risk communication program. The best strategy to control rumors is to refute rumors with facts, using outside opinion to support the information. Don't refute one rumor with another rumor or with incomplete facts, overstatements, and above all, don't joke about the rumor (Bell 1989). One established mechanism for rumor control is to install hot lines to answer questions from residents (Covello et al. 1988b). After a crisis, one should avoid a silence heavy with embarrassment because this promotes rumors. Do not pretend nothing has happened, issue denials, or refuse to release information or details (Lagadec 1987).

6.1.6 Institutional Framework and Trust for Risk Communication Programs

A prerequisite for effective communication is a procedural and institutional framework for decision making that encourages public participation and inspires public trust (Jasanoff 1987). Government should incorporate the public into its decision-making processes early in the project development with incentives for citizen involvement (Zimmerman 1987). Joint problem solving means discussing as many alternatives as early as possible and leaving some aspects of the policy or project adjustable for a wide range of values. In addition, any party should have the resources needed to participate and be able to propose new alternatives (Jasanoff 1988). Although citizens did not determine the

location of the chemical munitions, the Army has provided resources to communities to determine the validity of their decisions.

Public interest groups with demonstrated capabilities for risk management should be drawn as much as possible into the network of information sharing, thus reinforcing the lines of communication between industry, government, and the general public (Jasanoff 1988). Almost all research indicates involving the public is an inevitable condition for success. If the public does not perceive the problem as "its" problem, actions will be difficult to implement or even to justify (Jungermann et al. 1988).

6.1.7 Plan a Program to Fit Audience Needs

The major recommendation from the analysis is to assess the concerns of the targeted audience--but audiences and publics frequently have differing information needs. Communicators should allow for an individual's need to confirm disaster and emergency information. Compare risks within a carefully defined context that is relevant to the target audience and at the same time provides opportunities for people to learn how to interpret risk information (Covello et al. 1989). Find out what types of risk information people want (Hance et al. 1988).

Identify and respond to the needs of different audiences through responsiveness and equitable treatment of different groups (Hance et al. 1988). Recognize that individual value systems are legitimate and may convey a valuable information source. Provide a forum for expression of feelings and values and be open about agency values or constraints as well as conflicting personal values (Hance et al. 1988). Understand and respect individual interests, emotions, values, priorities, preferences, and concerns (Covello et al. 1989). Risk communicators should be sensitive to the characteristics of mental models because of framing differences between the public and that of experts (Cvetkovich and Keren No date). Consider these audience factors for successful risk communication: the level of involvement (as indicated by measures of issue importance, such as the personal consequences for the individuals), the motivation to process specific information about the issue, and the ability to process the given information (Earle and Cvetkovich 1988).

6.1.8 Comprehending Public Behavior

Risk communications can be improved by a greater sensitivity toward the audience's needs. It also helps to understand how people behave in an emergency (Bell 1989). Try to understand and recognize the qualitative concerns some members of the public have about hazards. Such concerns often focus on the catastrophic potential, dread, equity, and

controllability of risks (Covello et al. 1988b). People are concerned not only about the magnitude of risks (i.e., their probability-weighted outcomes), but also about their other qualities; the clearest example is whether the risk appears voluntarily or involuntarily imposed (Lichtenberg and MacLean 1991). Use community relations staff to interpret public concerns (Hance et al. 1988).

6.1.9 Design a Program Based on a Model

Using the two dichotomies of flow and intent, we can identify four different models of risk communication. It is recognized that these models simplify the underlying structure of the processes which are actually continuums and not categories.

Nevertheless, the typology allows us to examine critical assumptions underlying the communication process and to impose order on relatively complex phenomena. The models are labeled as follows:

- **one-way exchange**
- **one-way persuasion**
- **two-way exchange**
- **two-way persuasion**

Figure 6-1 summarizes various assumptions which further describe these four models.

The framework does not imply that any one of the four model types is incorrect or superior. That is situation-specific. For example, in the event of a sudden release of chemicals that present a hazard to nearby populations, the communicator needs to persuade the public to take protective actions, and with such limited time frame, does not have the time to establish a dialogue. Thus a one way persuasion model would be desirable. In a situation such as in the case of an agency with a mission to reduce high risk behavior for contracting the AIDS virus, the two-way persuasion model may be more appropriate. It is persuasive since a desired outcome is the goal, but two way as interaction and dialogue is needed to achieve the goal. In the case of negotiating a common position, such as when the Army should directly activate the alert/notification system, a two way exchange model would be desirable. In this case both parties need consensus on how to plan for the event. In the case of CSEPP public information, a one-way exchange might be an appropriate model. Most of the information is flowing from the agency to the public but feedback and evaluation is also important.

6.2 PROGRAM COORDINATION

Coordination enhances the likelihood of a successful risk communication program. Carefully and closely coordinate all communications within and between organizations, including all initiatives and actions (Covello et al. 1988a). For example, in developing emergency information programs, carefully coordinate evacuation/shelter plans and programs with all agencies involved, public, private or semi-public (Covello et al. 1988a). Develop communication plans for different scenarios by expecting the unexpected (Covello et al. 1988a). Key elements to a successful emergency public information program include:

- **a detailed emergency public information plan;**
- **an established chain of information flow outlining responsibilities;**
- **coordinated information sources and spokespersons;**
- **exercises and drills practiced regularly;**
- **management support, including both time and resources, for the public information efforts (Goldman 1986).**

Fig. 6-1 Model Framework

6.2.1 Organizational Needs

As in all preparedness plans, it is important to define organizational relationships in advance to avoid overlapping responsibilities and conflicts of interest in the heat of developing crisis (Otway et al. 1988). Examine the weaknesses of your organization to determine an appropriate structure for an emergency public information plan (Bell 1989). Agencies should examine their relationship with various interest groups and explore how such relationship could be improved (Chess and Hance 1989). Government programs that seek to reduce health and safety risks with information programs, instead of more conventional enforced standards, must be carefully crafted to accommodate the complex process (Johnson and Luken 1987). It is critical that crisis management programs have mechanisms for prompt notification of emergency personnel and for correct and judicious dealings with the media (Mitchell 1987).

From a different perspective, a much tighter control of the organizational environment is recommended for corporations. For example, corporate personal relations

personnel should seek all information; be careful about letting the media take pictures; emphasize previous safety records and heroic acts; avoid speculation about the emergency; give facts to media but say no more than to confirm what is known; never release names of victims; and always accentuate the positive (Mitchell 1987). Chemical companies must continue to communicate, not only concerning the criteria for determining what is deemed to be acceptable levels of exposure, but the plans for reducing releases (Black 1989). Companies should not try to sugar coat sour news (Grunig 1987). In establishing an understanding with and gaining cooperation from government agencies, develop information packages for agency heads, provide personal presentations, and concentrate efforts on key officials (Collagen 1989).

6.2.2 Prior Coordination Needed Between Agencies

Coordination between agencies communicating risk should be established before any information program is initiated. Information sharing and exchange between scientists, policymakers, administrators, and spokespersons from federal, state, and local governments must be assured. This avoids the appearance of conflict or lack of cooperation that could be used by critics as examples of bureaucratic inefficiency (Pavlova and Lufing No date). For example, the USGS recommends initiating communications with local communities by providing officials with key information which will eventually be distributed to the general public (Gori and Hays 1987). Where feasible, local communities should be involved at the research stage (Gori and Hays 1987).

6.3 MANAGING THE MEDIA

Managing the media is probably one of the more difficult aspects in designing a risk communication program for the CSEPP. Although most CSEPP programs now have trained PI staff, in the midst of a crisis others may have to communicate with the pubic and with the media.

6.3.1 Viewing the Media as Gatekeepers

A basic assumption in much of the literature is that the media is a pervasive first source of information throughout American society, setting public agendas for determining what people think about, and acting as "gatekeepers" for the types and sources of

information given to the public about risks. Other studies suggest a more benign view of the media's influence by emphasizing the contextual and social factors that continually interact with public perceptions of risks. Studies also indicate a biased viewpoint presented in the media coverage of both technological risks and natural hazards that are characterized by subjective rather than objective reporting formats and which rely on visual aids to enhance the dramatic rather than the factual information.

This issue of the media control of information involves two factors: the media's ability to publicize and promote public readiness for future protective actions and the individual or receiver's actual behavior in response to media warnings. The consensus in the research on natural hazards is that people use media sources selectively, relying on the media as a surveillance tool and for some information but still using family and friends for advice and suggestions on options for action (Ledinghan and Walters 1989). A further issue is how those personal contacts are themselves influenced by the media and how the advice from family and friends correlates with that of experts as given initially through media sources. If the media does have an agenda-setting capacity, that ability may translate to alerting specific populations and keeping channels open about what options are available when discussing risks—perhaps the most important capability of media communications.

Some confirmatory information to previous research exists on how mass media influences communication of risks. In survey findings after two hurricanes, one after Hurricane Alicia (1983) and the other after Hurricane Danny (1985), the media served to alert the population and to provide information on response options, but discussions with friends and family were found equally important in the options respondents ultimately choose (Ledinghan and Walters 1989).

An on-going issue in risk communications is the way in which different risks are projected through media accounts as being important. Greenberg et al. (1989) found that risks as calculated by scientists as critical had little to do with the amount of coverage provided by the three networks' evening news broadcasts. The 13.8 hours (1.7%) of actual network evening news time for man-made environmental risk issues in 26 months with emphasis on the spectacular or acute rather than the chronic effects appeared disproportionate given the overall concerns for chronic risks as expressed by experts. In their opinion the unequal coverage reinforced the public's overestimation of health impacts of acute risks and created underestimation of most chronic risk issues. "The public's conception of risk is almost certainly distorted by television's focus on catastrophes and its dependence on films," report Greenberg et al. (1989).

Issues arise over the media's actual and perceived public roles in communicating risk information. Nimmo and Combs (1985) point out that television networks are large

scale corporate organizations whose interests go well beyond the altruistic motives of informing the public. Coping with the internal needs of the organization as well as coping with external pressures are significant factors in shaping the news content as the "objective" realities of reported events. In addition to performing their daily work, television correspondents develop forms of shared definitions of news, conventions of objective reporting, an aesthetic and visual presentation, and an accepted grammar of news writing, and a logic of television news, as distinct from other modes of reporting. These factors play prominent roles in crisis reporting, regardless of the crisis itself (Nimmo and Combs 1985). Bias is also a problem. Some health risks, such as AIDS, are given moral overtures that bias the amount of factual information presented to the public by the media (Burd 1989).

6.3.2 Working with the Media

Methods to promote better working relationships between public officials with the media have been suggested. Ranking high on recommendations is to respect and work closely with news media, but not to depend on them to fulfill your communication needs. In a crisis, add staff to specifically answer media queries and hold regular and frequent press conferences and briefings, even if no new information is available. Respect media deadlines and provide information to the media of emergency communication plans and procedures (Covello et al. 1988a). If at all possible, improve interaction with information transmitters (science writers, community leaders, media) prior to a event and educate them over time (Keeney and vonWinterfeldt 1986). Corporate public relations persons should actively maintain contact with media, check with upper management before responding to questions, and keep a log of all information disseminated through their office (Mitchell 1987).

6.3.3 Involving the Media to Achieve Participation

Despite the difficulties of media communication about issues and the cost of public scrutiny, there remain sound political, ethical, and pragmatic reasons for improving media access to risk communication (Nelkin 1989). It is necessary to involve media and other information sources because the public's main source of information about risk issues is often the media (Pavlova and Lufing No date).

To minimize problems with the media outlets, develop an ongoing relationship marked by careful coordination between emergency managers and the media representatives. Such coordination has been an important avenue to increased public

safety in areas with volcano threats (Perry and Lindell 1987). The responsibility to inform the media and, through them, the public about environmental risks belongs to everyone associated with environmental issues. These include the technical, scientific, corporate, regulatory, and community news sources (Sachsman et al. 1988).

To remove barriers, communicators need to better understand and respect journalistic norms, values and needs. Developing a certain degree of sympathy for the needs of working journalists should improve press coverage of risk (Sandman et al. 1987). Communicators must understand that the media have a legitimate "alarming function" and seek to overcome professional or organizational norms that prohibit communication with the public (Sandman and Peters 1988).

A continuing educational program for journalists should include a training session on the use of informational materials. Better understanding of the role of media is important because the media is important in improving risk regulation (Peltu 1985). The media has helped broaden the base of participation in regulatory decision-making by giving prominence to views of intervener groups, dissenting experts, and local communities. The media have also supported the status quo by too readily accepting public relations techniques of government agencies, industry and politicians (Peltu 1985). Risk communication informs the public and thereby promotes agency accountability (Baram 1986). For the risk communication process to be effective, people must be aware of the risk, have knowledge and skills for appropriate action, and receive positive reinforcement for appropriate behavior (McCallum 1986).

6.3.4 The Media as Channels and Sources

A theme running throughout the risk communication literature is that the media is not a passive channel to the public. The growth of the disaster culture, and the intrusion of the mass media into that culture, has become a new element for the hazards community to both understand and harness for certain goals (Wilkins 1989). It is recommended that communicators take a proactive approach to establish relationships with media and to demonstrate the ability to serve as a source of objective, balanced information for news media because the media have the potential to either seriously undermine or enhance communication efforts to provide objective and accurate information (Pavlova and Luftig No date).

The ability of the media to help set regulatory agendas can mean that risks which meet certain criteria of journalistic "news worthiness" are given greater priority than chronic hazards which may be of wider importance (Peltu 1985). Many organizational

factors and professional practices influence decision on what finally appears in the media (Peltu 1988). Press coverage of environmental risks can be improved both through the use of continuing educational techniques, and the actions of environmental news sources to educate journalists (Sachsman et al. 1988).

Attempts should be made to meet the needs of news media by being open and accessible to reporters while respecting their time and space constraints; provide information tailored to the media's needs. Try to establish long-standing relationships with reporters and editors in your community prior to an event. Don't be discouraged that journalists often seem more interested in politics than risk, in simplicity than complexity, and in danger than safety (Covello et al. 1988).

As part of a formal emergency plan, establish rapport with media outlets before a crisis occurs (Bell 1989). Although the media are usually considered a channel through which to reach an audience, in risk situations that involve complex and highly technological issues, journalists must often be educated before they can be accurate channels (Collagen 1989). Getting the media, as an audience, to understand how risk is determined is like "force-feeding"; bring experts to the media for in-depth interviews and have a comprehensive background paper to present basic science and studies involved in particular issues (Collagen 1989). Provide information tailored to needs of different media such as visual material for television and short spoken quotes by senior official for radio (Covello et al. 1988).

Take steps to ensure the quality of media reporting by establishing a news monitoring system within your agency (Covello et al. 1988). Other suggestions include having background information prepared for the media (Sandman 1987) and using public relations techniques for packaging press releases to the media to increase risk coverage (Nelkin 1987). Risk assessment experts can overcome the limitations of televisions news criteria, which emphasize the visual and the acute, by making chronic risk information more visual; this will help break the barriers of television news and help provide the press with a more accurate perspective on risk (Greenberg et al. 1989). To maximize news media opportunities, the public information office needs a support staff and sufficient time in which to design public service communication (Stockdale and Sood 1989). Another recommendation is to provide a hard copy of announcements and dissemination of repetitive information for increased efficiency in public information operations (Stockdale and Sood 1989). Solutions to the information lag problem include changing topical agendas and having updated status boards (Stockdale and Sood 1989).

Journalists need to learn more about technical aspects of hazards and emergency response (Stockdale and Sood 1989). News managers should withhold reports until

confirmation of sensational stories can be made and avoid being driven by the "scoop" mentality (Stockdale and Sood 1989). To improve media performance and help journalists get reliable information about risk topics, reporters need to be educated in the importance and subtleties of risk stories with access to knowledgeable and cooperative scientists (Slovic 1986).

6.3.5 Managing Media Messages

One problem for communicators is providing information to media outlets that will be used in the intended communication. Factual information provided to the media should be given in an orderly controlled fashion (Mitchell 1987). One of the chief roles of the media after a disastrous event is to reconstruct the event, instructing the viewer or reader as to why the recent event happened, and how to interpret future occurrences with the mediated reconstruction geared to prediction and prevention of future disasters (Wilkins 1989). The accuracy of reporting is a major concern in risk communications. How the nature and roots of values, beliefs, and fears develop that draw people together in opposition or in support to things nuclear illustrates the impact of media influence. This includes the influence of messages sent through the entertainment media (Shain 1989).

6.4 COMMUNICATION TECHNIQUES

6.4.1 Maintain Audience Appeal

A difficult task is to attract and maintain an audience's attention. In some cases, it is desirable to use innovative ways to attract the attention of the audience (Covello et al. 1988b). Desvouges and Smith (1988) make the following recommendations when working with focus groups. When working with civic groups, church groups, and social organizations, it is preferable to offer a modest fee to create a sense of responsibility for attendance. Keep groups relatively small (8-10 people). Send people confirmation notices and brochures to reduce anxiety about intentions. Make sure the moderator is represented as a nonexpert. Don't try to hold focus groups with respondents who might have difficulty with the topic because they are not informed. Arrange for multiple record-keeping for each session, videotaping if possible. Have clear objectives and a written agenda. Select a relaxed setting and keep an informal format (perhaps including refreshments). Keep sessions under two hours. Remain at the location for some time after session to attend to informal opportunities for discussion that help alter impacts and ease anxieties.

6.4.2 Communicator Skills

> **Select the most appropriate communicator for the situation, if there is any room for choice (Jasanoff 1988). The American Chemical guidance manual (1988) advises: "Be honest, frank and open. When communicating with the public and the media, state your credentials but do not expect to be trusted. Admit your ignorance and mistakes, and if in doubt share more information."**

It is important to speak clearly and with compassion, using simple language (Hamilton 1986). Technical language and jargon pose substantial barriers to successful communication with the public (Covello et al. 1988b). It helps to acknowledge and respond both verbally and through actions to the emotions people may express. Try to avoid distant, abstract, unfeeling language about deaths, injuries, and illness. Respond to dimensions of risk (e.g., equity and catastrophic potential) and avoid comparing unfamiliar risks to familiar ones unless they are in all the dimensions people consider important (American Chemical 1988).

To be effective, spokespersons should have both good presentation skills and good interactive skills (Covello et al. 1988b). Spokespersons at public meetings should identify with the audience and avoid violations of community norms regarding dress, language, and demeanor (Covello et al. 1989). The expert should show his human side (similarly between source and receiver) and establish agreement on some issues even when irrelevant (Lee 1986).

Portray results in terms lay people understand (Keeney and vonWinterfeldt 1986). Risk communicators should avoid technical and bureaucratic language and, try to address people's concerns directly. Communicators should provide the public with information that can be related to personal experiences and which fosters individual learning (Keeney and vonWinterfeldt 1986). Recognize the power of subtle changes in the way information is presented and the use the knowledge responsibly (Covello et al. 1989). Relate on a personal level without minimizing risks and uncertainties (Covello et al. 1989) and respond to people's concern by personalizing responses (Hance et al. 1988).

The factors that improve public acceptance of messages are:

- **clarity of information,**
- **consistency,**
- **clarification of main points,**

• appropriate tone and appeal,

• credible spokesperson, and

• information based on what the public perceives as the most important to know (Arkin 1989).

6.4.3 Managing Audiences

Several methods of managing audience response have been suggested. If resources are not an issue consider this directive: prior to message development, divide the public into manageable groups according to risk, media exposure, attitudes, knowledge, and behaviors, or other characteristics to help define an appropriate message (Arkin 1989). What is important is to recognize that the public is not a single, undifferentiated mass. To create a good risk communication program, segment the audience when possible (Covello et al. 1988). To aid in honing a message, use market research techniques to identify an audience's awareness of risk and related issues (Collagen 1989). To encourage behavior change and protective action communicators should attempt to identify a target audience and tailor communication to that audience (Covello et al. 1989).

Successful risk communication rests on the generation of knowledge about the target audience and on the ability of the communicator to create messages to fit the identified needs of the targeted audience (Earle and Cvetkovich 1988). Successful targeting requires research into the perceptions, needs, and social characteristics of all involved (Diggs 1988). Shotgun (scattered) risk communications to the general public are ineffective especially when targeting organized groups such as environmentalist or neighborhood groups. Pavlova and Luftig (No date) suggest thinking of the public as segmented into three types of audiences that include:

• those individuals who are open-minded, interested, and want to know more about the issues

• those most immediately affected by the risk situation such as the citizens living closest to the area of risk, such as a Superfund site; and

• those intermediaries or others who serve as gatekeepers in reaching audiences.

Another important issue for risk communicators is how to use focus groups effectively. Focus groups can be especially effective in exploring people's perceptions of risk,

how those perceptions are linked to personal attitudes and characteristics, the influence of visual aids on perceptions, as well as highlighting the differences between technical risk assessment results and people's risk perceptions (Desvouges and Smith 1988).

6.4.4 Communicating Uncertainty

One of the most difficult tasks for a risk communicator is to discuss uncertainty with audiences. It is important to identify, acknowledge, and explain uncertainties in risk estimates (Covello et al. 1988b). Oftentimes acknowledging the uncertainty relieves some of the tension between parties. Even when certain about risk measurements, communicators need to be cautious with point estimates of risk. It is a fallacy to assume that precise estimates of risk are true representations. Begin by stating that risk is uncertain; next, state the extent of uncertainty; bracket the range of credible risk estimation to indicate the major sources of uncertainty; and (if possible) state the sensitivity of the estimate to each of the different types of uncertainty (Kasperson and Kasperson No date).

Attention to the conveying technical information must go hand-in-hand with attention to the contextual factors affecting its reception and in raising issues not addressed by the technical information (Jasanoff 1988). It is important to realize that no single approach will be adequate. In communicating with the public on risks to health, the uncertainty in the information that is conveyed must be specified, along with the reasons for uncertainty (Upton 1989). Oversimplification is dangerous; the idea that each issue can be divided neatly into two and only two sides (pro and anti) does not indicate that news coverage of a issue should be balanced (Lichtenberg and MacLean 1991).

6.4.5 Discussing Risk

Discussing the quantitative aspects of risks is often a challenge. A point to remember is that just as good comparisons help, poor comparisons can mislead and confuse. Avoid lumping comparisons that will be seen as misleading, such as comparing voluntary and involuntary risks, risks affecting different generations, or risk from small repeated events with those from catastrophes (Kasperson and Kasperson No date).

If comparing risks, avoid comparisons that mask "outrage factors" or that minimize or trivialize the risk; instead develop comparisons of similar substances or situation (Hance et al. 1988). The effect of comparing an environmental risk to some other for which the public has a "better feel" trivializes the environmental risk (Ozonoff and Bowden 1987). Conditions in which risk comparisons may be useful occur when the comparison clarifies

but does not minimize or dismiss the issue, and when the information is personalized for the individual (Sandman 1987). Add enough qualifiers and guidelines to prepare people for what you are not telling them. For example, likening the level of PCB emissions from a proposed incinerator to that emitted from a home fireplace. In addition avoid abstraction, use concrete examples, and avoid oversimplification (Sandman 1987).

Risk communicators should try to understand lay people's individually oriented structures of risk problems and the result of risk analyses both within the individual's perceptions and within the society they are working with (Keeney and vonWinterfeldt 1986). Another common mistake—not recommended—is to attempt to identify public attitudes about risk by measuring peoples' responses to hypothetical questions (Krimsky and Plough 1988).

6.4.6 Techniques when Information is Highly Technical

When confronted by an unusually complex scientific issue, it is important to use simple and non-technical language to communicate scientific information about health and environmental risk. Communicators should attempt to use simple, graphic, and concrete material, and avoid technical or specialized language whenever possible (Covello et al. 1989). When discussing risks, various social and psychological perception factors should also be taken into consideration, remembering that people's perceptions are neither right nor wrong. As identified by researchers factors of risk include voluntariness, controllability, benefits, alternatives, familiarity and fairness (American Chemical 1988).

It helps to provide a perspective for risk numbers by explaining risk assessment techniques before presenting the actual numbers. Try using graphics and avoid dichotomizing risk; express risks in several ways and explain the agency's approach to risk assessment (Hance et al. 1988). Acknowledge uncertainty about risk assessment (Hance et al. 1988). Personalize responses to personal questions about risk. Take the most care in presenting technical information in ways and in language that informs the recipients. If possible, limit a message to only three or four main ideas with sufficient background to avoid oversimplification (Hance et al. 1988).

Agencies should develop mechanisms to make the agency "user-friendly" to those outside the government (Chess 1987). When selecting an agency spokesperson, choose a person who is able to speak to the media, to the public, and to interested groups (Withers 1988). Agencies should establish internal policies requiring early release of information (Chess and Hance 1989). Agencies should also establish free, easily accessible telephone hotlines to control rumors and updates of the latest information (Covello et al. 1988a).

6.4.7 Dealing with Uncertainty about Audience's Level of Understanding

The best way to deal with uncertainty concerning the audiences' level of problem representation might be a top-down approach. Start with the highest level of the audience, establish shared understanding, and work your way down to the lower levels. Starting at the bottom and moving to the top may obstruct further communication efforts (Cvetkovich and Wiedermann 1988).

6.4.8 Communications During Disagreements

An important aspect of risk communication is to distinguish the level of debate: investigate the level of debate beforehand and design different communication program for each level (Renn and Levine 1988). Communicators should be aware that their and their audience's concept of "risk" differs from that of experts and that both concepts are legitimate and useful (Sandman and Peters 1988). Dissenting groups are more likely to express concerns in a constructive manner when there is a fair distribution of expertise among affected parties (Peltu 1988). Communicators need to adopt different communication strategies by carefully analyzing the nature of conflicts and distinguishing between different types of conflict (Covello et al. 1989). For example, distinguish factual disagreements from deeply rooted ideological conflicts (Covello et al. 1989).

Above all know your risk communication problems (Covello et al. 1989). Try to generate involvement by creating vivid, concrete images that the audience can relate to on a personal level (Covello et al. 1989). If possible, include information for the public in the planning process that focuses on resolving conflicts between expert and public risk judgments (Earle and Cvetkovich 1988).

One of the main purposes of advertising and public relations is to frame the attributes of the subject matter in the most favorable light by emphasizing the positive aspects and minimizing negative ones. The use of these techniques can be of major significance to avoiding disagreements during risk communication activities (Peltu 1988).

6.4.9 Use of Innovative Channels to Target Information

To reach other segments of the public, use alternative, even unconventional, channels (see Table 6-1). For example, volunteers from teacher workshops, PTA meetings, and groups such as the Girl Scouts can help expand community awareness (Bolton 1987). The Utah CSEPP used Boy Scout Troops to disseminate public information brochures. To

reach the scientific and medical communities, publish in medical or scientific journals, use the semi-technical press, and send speakers to scientific and regional conferences. When an issue is cloudy or controversial, have a media tour, have experts on radio and talk shows, and use editorials, newspaper articles, and bylined magazine articles (Callaghan 1989). Other related suggestions include developing a scientific newsletter when a risk issue is embroiled in controversy, organizing traveling seminars when the audience is dispersed, and using qualified professional writers for all communication efforts (Callaghan 1989). Flexible methods (slides, videos) are necessary for reaching different audiences. Include local touches to enhance relevance of material for the intended audience (Bolton 1987). Clearly such techniques would lend themselves to improving communications within the CSEPP.

Modern communication technologies also offer an unprecedented means for transmitting facts, knowledge, discussion, and ideas that help decision-makers become better informed, more participative, and responsive to issues than previously feasible. Presently, there is a need to examine how news media—from video text to personal computer networks, from communication satellites to fiber optics—are adding an interactive and feedback element that was absent from the one-way media communication channels of the past (Quarantelli 1989).

Table 6-1 Alternative Communication Techniques

Electronic Media
Radio Spots
Public Service Announcements
News Programs
TV Specials
Films/Videos
Slide Show
Records
Written Media
Ads
Feature Stories
Editorials
Special Publications
Pamphlets
Comic Books
Instructional Books
Flyers
Phonebook Inserts
Newsletter
Specialized Prompts
Signs
Stickers
Magnets
Calendars
Phonebook Cover
Community Outreach
Community Meetings
Focus Groups
Lectures at Civic Meeting
Door to Door Canvassing
Information Center
Kiosk
Displays in Public Buildings
Hotlines

6.5 ENHANCING CREDIBILITY

6.5.1 Developing Credibility

Credibility is a scarce resource for which different groups compete in communication process. Both trust and confidence are necessary conditions for the assignment of credibility to a source (Renn and Levine 1991). Credibility is also related to the perception the public holds of past performances both of the communicator and the institution.

To facilitate media relations procedures, assign a specific person as well as a back-up as spokespersons so that a quick reaction is guaranteed (Mitchell 1987). Institutional as well as individual sources of risk information could learn to be more effective communicators by avoiding jargon and being accessible to and cooperative with journalists. All efforts should be made to identify and eliminate barriers for effective communication (Sandman and Peters 1988). New as well as traditional means of communication (computers, videotapes) should be used to help people "find out how to find out" (Upton 1989). Lack of information creates credibility problems. Journalists need to understand that information becomes available at different points in time and should avoid demanding information that does not yet exist (Stockdale and Sood 1989).

To earn trust and credibility, be aware of factors that inspire trust, pay attention to process, explain agency procedures, be forthcoming with information and involve the public from the onset, focus on building trust as well as generating good scientific data, provide follow-up, make only promises that can be kept, provide information that meets everyones' needs, get facts straight, coordinate with other agencies and within the agency, avoid mixed messages, listen to citizens' groups, avoid closed meetings (Hance et al., 1988). Situations involving low levels of social trust require an explicit recognition that an agency faces both short- and long-run objectives that may be inconsistent and even in conflict (Kasperson 1986). We must restore public confidence in government's ability to anticipate and prevent accidents (Zimmerman 1987).

Agencies seeking credibility should develop internal policies requiring public participation. Management can also routinely raise questions about the adequacy of public participation during internal discussions of plans and policies; consider withholding approval of agency actions, programs, regulations, and policies that have developed without input from those affected; and take care to consult with the public before promoting their own policies (Chess 1987). Another suggestion is to encourage open communication within the agency (Chess 1987). Institutionalize early release of information (Chess 1987). For

example, the Centers for Disease Control's (CDC) experience in carrying out the government's role in risk communication has been to tell the truth, the whole truth and nothing but the truth (Mason 1989).

To overcome credibility problems, industry has to develop honest communication rather than propaganda (Long 1988). Case studies show that good neighbor relationships and sincerity coupled to appropriate constructive mechanisms work wonders for alleviating public concern and establishing communal trust (Morgan and Vlek 1988). Credibility problems have been associated with the "cry-wolf" syndrome. Thus it is important to design warning systems that can remain credible even if the threat does not materialize (Covello et al. 1989).

6.5.2 Strategies to Enhance Credibility

Several tactics have been suggested to enhance credibility efforts. Among the methods recommended is to coordinate and collaborate with other credible sources, such as third-party experts, have internal coordination with government agencies, and coordinate with other organizations that have similar interests. For example, cooperation between federal, state and university researchers should be maintained in order to develop wider expertise and to expand credibility (Gori and Hays 1987).

Another method to increase credibility is to establish relationships with community leaders (including media representatives) early in the communication program. However, agency personnel will need training before they can be expected to be spokespersons and reach out into the community. Enhancement of credibility requires continuous coordination and the perpetuation of network activities; a singular attempt will not suffice (Pavlova and Luftig No date).

Credibility is also a function of the individual within the organization. A spokesperson must be credible (Withers 1988). It is recommended that agencies use two credible senior spokesperson who understand the situation and can explain it to the lay public, provide details, and use correct, consistent, and current information (Lagadec 1987). Build on expertise, trust, and credibility. States Covello et al. (1989):

> **"People are more willing to accept a communication if the communicator is believed to be knowledgeable, respected, unbiased, and truthful."**

To improve trust in a personal communicator, the major goal is to develop a communication climate that enables the audience to identify with the communicator and share his or her experiences and beliefs (Renn and Levine 1988). Confidence in experts is a key part of the

risk communication process and this should be established early in the process (Zimmerman 1987).

Risk assessors must be sophisticated in the risk and policy decision arenas in order to achieve reasonable fairness in communicating (Hattis 1989). Improve communications of the results of standard risk assessment by building trust in individuals who are undertaking analyses, preferably through Citizen Advisory Committees (CAC) (Konheim 1988). Public perception of fair treatment is critical to effective risk management (Long 1988). Journalistic and public relations skills can be of great value to all communicators and can be as influential as the distribution of other forms or expertise among actors (Peltu 1985). Reports Slovic (1986):

> **"To be credible and trustworthy, a communicator must know enough to acknowledge valid criticisms and to discern whether the available risk estimates are valid enough to have value for helping the public gain perspective on the dangers they face and the decisions that must be made."**

Conditions in which risk comparisons may be useful is when the source is credible and neutral (Sandman 1987). Risk communication suggests that communication by experts is the key to trust but experts themselves need to be educated about their own biases and adopt the existence of competing cognitive systems for evaluating risk (Jasanoff 1987).

6.6 INVOLVING THE PUBLIC

6.6.1 Programs for Enhancing Public Participation

A variety of model programs have been designed to improve risk communication efforts. Alternative model programs to improve risk communication efforts include establishment of a local liaison committee, an independent advisory committee, an office of technology assessment, a local environmental risk ombudsman office or a community risk communication office; each help to increase citizen participation albeit through different methods (O'Riordan 1988). Public and intervener group pressures have also been a significant factor in focusing regulatory attention on industrial risk, making public opinion, as expressed through various participatory approaches, an important ingredient in determining regulatory outcomes (Otway and Petu 1985).

6.6.2 Community Involvement

In general communicators should involve the community as soon as possible in implementing a program. It is important to recognize the importance of community input and involve the community in decision-making process by clarifying the public's role from onset, acknowledging situations where an agency can give a community only limited power, and finding out what levels of involvement communities actually want (Hance et al. 1988). By involving the concerned publics from the earliest possible stage, the public knows what the agency plans. Often in the process the agency goals become their goals with the outcomes more likely to be comprehended and accepted (Mason 1989). Activities aimed at informing the public should occur early on, and continue throughout the consideration and decision process (Kasperson 1986). It is important to involve local citizens in environmental studies from design stage onward to improve program design and performance (Ozonoff and Bowden 1987). Involve local citizens in the design of programs aimed at providing disaster warnings and emergency information (Covello et al. 1989). Involve community groups in drafting evacuation and sheltering plans (Covello et al. 1988a). Information from simulation exercises should be shared with the public (Black 1989). Finally, it is important to leave room for alternatives proposed by those directly involved with or affected by the decision (Covello et al. 1989).

Using a two-way symmetrical approach in which the communicators and the public are considered equals facilitates communication efforts (Grunig 1987). One should acknowledge the community's outrage in understanding their perceptions of risk (Neutra 1989). For example, by giving communities a substantial role in suggesting what tasks need to be accomplished, a California state agency established an on-going and valuable relationship with community members (Neutra 1989). It is also important to educate emergency managers on the various requirements of different groups, such as local populations, news media, and the distant mass media (Stockdale and Sood 1989).

To build a successful risk communication program, communicators should accept and involve the public as a legitimate partner with the goal to produce an informed public that is collaborative (Covello et al. 1988b). By listening to an audience, a risk communicator can distinguish what concerns people in the community. Communities are often more concerned about such issues as trust, credibility, control, competence, voluntariness, fairness, caring, and compassion than about mortality statistics and the details of quantitative risk assessment (Covello et al. 1988a). To avoid conflict, communicators should attempt to involve the public early in the decision-making process

before critical assumptions have been made, alternatives narrowed, key decisions made, and before decision makers have become committed to a particular course of action (Covello et al. 1987). The usual strategy of simply reducing anxiety may not be consistent with educating the public about risks, helping then to identify their personal risks, or helping them to improve their perceptions about relative risk exposures (Johnson and Fisher 1989).

6.6.3 Gaining Feedback from Communities

Risk communication should be looked at not only in terms of how accurate, detailed, or intelligible the information is but also in terms of how the information will be interpreted by the receivers (Fessenden-Raden et al. 1987). One way to gain instant feedback from the public and to set the stage for continuing dialogue is to use open public meetings (Collagen 1989). Alternative models for public input (other than public hearings) include setting up informal meetings, hotlines, community-based task forces, and "out-of-office hour" (Chess 1987). Holding routine informal meetings with representatives of community and environmental groups outside of crisis situations aids in gaining feedback from the community (Chess 1987).

To improve communication with the public, agencies should develop mechanisms that make an agency approachable. Agencies should discourage "bouncing of callers" by agency staff (Chess and Hance 1989) and have communication experts assist technical and policy staff to interact effectively with communities. Most people prefer to talk directly with people making technical and policy decisions (Chess 1987).

Within the agency, senior officials should clearly mandate public involvement in decision-making (Chess and Hance 1989). Risk communication should be regarded as a reciprocal process of interaction between information disseminators, decision makers, and local people (Diggs 1988). In a controversial dioxin case, effective communication techniques included early high-level involvement with the governor and an EPA official, recognition that priority for monitoring of health hazards should be given to people at risk, referred to outside experts, the immediate release of data when it became available, involvement of local officials and agencies, frequent briefing of the press, and regular one-on-one contact with residents. Other tactics included providing advance information about monitoring and clean-up activities, avoidance of large public meetings in favor of a small, individual, or group sessions, and making available to the public a sufficient number of press and community relations specialists (Marshall 1989).

Feedback is particularly important when the communication structure is designed to be one-way. A better understanding of cognitive structures and processes is another

important condition for successful risk communication, especially when communication is one-way (Jungermann et al. 1988). It is important to provide information to audiences in ways that will be meaningful to them (Mason 1989). Tell people what they ought to know, answer their questions, and provide instructions for what they need to know (Sandman 1987). For example, when issuing disaster warnings and emergency information, communicators should provide concrete information about specific actions individuals can take.

To be effective, information about risk reduction must be direct and explicit enough to make clear what is necessary. Communication must teach by word and mouth and not by euphemism and implication (Keeling 1987). Telling the public not to worry about a public health concern does not help if agency staff are seen moving their families out of the area. Strategies for improving risk communication should be aimed at increasing the learning potential both for both regulator and the public and improving public long-term education about risks (Keeney and vonWinterfeldt 1986). In this context, communicators must be clear in their own minds that the process is one of negotiation rather than manipulation (Kauffman, 1986).

6.7 ORGANIZATIONAL CHANGE

Internal policy changes within organizations may improve risk communication processes. Assign communication staff to amplify community concerns within the agency and to bring community needs and concerns to the agency "before communities feel the need to shout" (Chess 1987). Create communication positions at all levels of the agency to promote interaction with communities (Chess 1987). What is important is that organizations devote resources and top-management attention to crises communications (Shrivastava 1987). Chess (1987) offers these suggestions to enhance communication efforts within organizations:

- **Consider communication abilities and experience when developing job descriptions and in hiring decisions so fewer staff members are "communication averse";**
- **Coordinate communication functions within the agency using a mechanism such as a communication office that serves as a resource to the agency, facilitates consistency, reduces duplication and handles a limited number of programs outside program boundaries;**

- **Disseminate information about risk communication successes through an internal "good news letter" and working group;**
- **Involve communication staff in developing (not just transmitting) policy;**
- **Provide information about risk communication in orientations for new staff or in the hiring process;**
- **Provide training through in-depth workshops for agency staff on handling public meetings, dealing with the media, developing communication plans, and reward staff communication efforts;**
- **Make organizational objectives for involving the public clear from the beginning;**
- **Require funding for communication efforts in project budgets;**
- **Use innovative means to resolve disputes so citizens have alternatives to taking to the courts or to the street. Suggestions include developing internal ombudsman positions or offering negotiation or mediation that involve neutral outsiders.**

Changes in internal policies can improve communication crisis. For example coordinate disaster warning systems of different organizations; establish a centralized communication center at onset to collect, analyze, and interpret all disaster-related information and manage all disaster communications (Covello et al. 1988a). Devote resources to resolving uncertainties and expert disagreements about what constitutes an effective and efficient response to emergencies; organize a crisis management team or task force at onset to coordinate all disaster-related activities and communications (Covello et al. 1988a).

An emergency public information staff should be top quality; they should be able to transfer from normal operations to emergency operations smoothly and efficiently. To respond to emergency activities and to service the company's own interests, a company must develop a comprehensive corporate emergency communication program that involves the entire company, not the public relations personnel (Goldman 1986).

An example is provided by recommended shifts in policy within the USGS hazard program. One suggestion was to provide a coordinating mechanism within the Office of Earthquakes, Volcanoes and Engineering to continue exploring social science applications of USGS hazard and risk information. Hazard warnings and notifications issued between 1976–1986 were to be reviewed with social science participation and a feedback process established to develop recommendations for improvement. It was also recommended that a

few key projects to assist USGS scientists in improving communication with key users and decision makers should be undertaken (Gori and Hays 1987). Federal, state and local networks should be established in areas where hazard detection research is taking place and where hazard warnings are a possible outcome of research (Gori and Hays 1987). It was also suggested that the USGS needs to recognize and reward individuals who are responsible for interacting with the public and state and local government (Gori and Hays 1987).

Policy makers should determine at the onset whether their response to a hazard, such as radon, should be consistent with the implicit objective of the conventional standard-setting approach or whether the facts and context of the radon problem justify a more radical policy change (Johnson and Luken 1987). Agencies must frequently address multiple conflicting policy objectives. In such cases interdisciplinary teams may be needed to address risk problems as no single person can be expected to be an expert in all disciplines (Keeney and vonWinterfeldt 1986).

Government can alter its institutional processes or the process by which risk is communicated by broadening the risk communication processes to include generic forums that precede project development. Forums are needed to assess the need for a facility independent of any proposal. Risk communication should address an agency's or sponsors' overall expertise and standing in the area of risk analysis and environmental decision making prior to any site-specific proposal (Zimmerman 1987). A prerequisite for effective communication is a procedural and institutional framework for decision making that encourages participation and inspires trust (Jasanoff 1987).

6.7.1 Issuing Warning Messages

To improve on short- and long-term information the issuance of warnings and the communication of hazards should be seen as a process, not as a single act (Mileti and Sorensen 1988; Gori and Hays 1987). Warnings must be well thought out with messages drafted and tested in advance of needs (Gori and Hays 1987).

Ten factors have been documented as being important to issuance of a good warning (Mileti and Sorensen 1987; Sorensen, Mileti, and Vogt 1987). First is the source of information. People have different views about who is credible and who is not and any one source will not be perceived as credible by an entire population. A warning message which contains endorsements by a mix of scientists, organizations, and officials is more likely to be considered credible. Emergency public information or warnings that are credible and reliable to the people receiving them are more likely to stimulate response.

Second, a warning message is more effective if it is consistent in the information given and the tone used to convey the message. Inconsistency in the tone or information is a message creates confusion and uncertainty among recipients (Segaloff 1961). Consistency in the way the message conveys information about the level of risk is also important. For example, a message that states that something is happening but there is no cause for concern is less effective than one that states how concerned people should be in light of the situation.

Consistency among multiple warnings is also a determinant of understanding and belief. In a study of the Rio Grande Flood, Clifford (1956) found that inconsistent information caused confusion and people were less likely to understand or believe that a flood was going to occur. Fritz (1957) reached the same finding in a study of warning responses in a wide range of disasters.

Third, accuracy of the information also affects understanding and belief. For example, Mileti et al. (1975) state that past errors in disaster warnings can cause people to be less likely to believe subsequent warnings.

Fourth, the clarity of the emergency information is important. A warning message that is worded clearly in simple language is more effective because people are more likely to understand what is happening and what they should do about the situation. A lack of clarity in a message can lead to people misunderstanding the message or ignoring it.

Fifth, a message that conveys a high level of certainty about the events taking place and what people should do is more effective than a tentative one. Even if there is a low probability or the situation is ambiguous, messages can vary in their level of certainty (even about the ambiguity). Certainty determines the level of belief in a warning and affects decision making. In a study of response to earthquake prediction, it was found that warnings become more believable as the probabilities attached to them become greater (Mileti et al. 1981). If warnings are certain, people are more likely to evacuate.

Sixth, the level of detail of the information in a message influences evacuation decision. Not knowing or feeling that one has insufficient information on which to act creates confusion, uncertainty, and anxiety. If messages contain insufficient information, the public's response is to fill the information void. This can promote rumors or uniformed misperceptions or fears. The amount of information provided affects understanding, personalization, and decision-making. A study of family response to hurricane and flood warnings conducted at the University of Minnesota found that general and vague warnings caused people not to take protection actions (Leik et al. 1981). In a study of response to the Mount St. Helen's eruption, it was found that a more detailed information led to higher levels of perceived risk, and therefore to protective action being taken (Perry et al. 1982b).

Seventh, messages containing a clear statement of guidance about what people should do about the event being described and how much time they have in which to act are more effective than ones that don't provide specific instructions. Guidance is often necessary to encourage people to take the proper action. A study of the Big Thompson Canyon Flood (Gruntfest 1977) found that people who received warnings during the flood were not necessarily advised on what to do. As a consequence, many who were warned attempted to drive out of the canyon and were killed.

Eighth, the frequency of public messages influence evacuation behavior. People frequently do not evacuate after hearing one warning. Frequent information is thought to reduce anxiety created by not knowing when one can confirm what is happening or learn more details. In addition, frequent messages reduce the effect of misinformation and misperceptions. Frequency affects hearing, understanding, believing, and deciding, and is thus important at most stages of response. Numerous studies underscore the importance of repeated hearing of a warning as a condition for response.

Ninth is the specification of location in the message. Emergency warning information should clearly state the areas affected or potentially affected by the event. Identifying a location is important in determining belief and personalizing a warning. For example, Diggory (1956) found that the greater the proximity to a threatened areas, the more likely a message will be believed. Other studies show that more location-specific messages lead to greater levels of personalized risk (Perry and Greene 1983).

Tenth, the channel of information plays an important role in warning response. Effective warnings use a range of possible channels instead of a single channel. This helps in reaching as many people as possible in a short amount of time. Personal communications are generally more effective at getting people to rapidly evacuate than media or sirens (Mileti 1975; Gruntfest 1977).

6.7.2 Warning Message Techniques

It is important to provide precise, unambiguous information on actions people can take to protect themselves and their property in an emergency (Covello et al., 1988a). Messages should be presented with clarity, certainty, accuracy, specificity and frequency (Mileti and Sorensen 1988). Disclose disaster or emergency information fully and promptly presenting disaster and emergency information in context of concrete events (Covello et al. 1988a). Stagger the provision of evacuation information and provide frequent updates and briefings about disaster situation (e.g., the geographic area affected, the population at risk, alternative escape routes) (Covello et al. 1988a). Develop disaster awareness campaigns

that educate, not frighten, the public (Covello et al. 1988a). Provide specific information and actions that people can use in preparing for a disaster or during an emergency (Covello et al. 1988a).

Be honest, frank and open in communicating risk information. Trust and credibility are most precious assets—difficult to obtain and once lost, almost impossible to regain (Covello et al. 1988b). The need for clearer and more effective communication should be prime consideration (Brower 1986). Formulating a message on risk requires maximum accuracy and minimum gimmickry; communications will not occur in a vacuum; make sure the same information is being conveyed to all audiences (Collagen 1989).

6.7.3 Program Evaluation and Feedback

No matter how well a communicator or agency believes the communication program is progressing, some outside feedback is necessary for an unbiased evaluation. A good risk communication program encourages evaluation of communication efforts (Chess 1987). A number of ways exist to do so. A simple method is to obtain feedback from audiences (Bolton 1987); evaluate performance and learn from past mistakes (American Chemical 1988; Covello et al. 1988a). Agencies need to pay greater attention to understanding how the public interprets the scientific bases of their proposals. Just as the public may need to improve its comprehension of the science behind proposals, officials need to improve their understanding of what concerns the public (Chess and Hance 1989). It has been suggested that communicators should evaluate performances in terms of different goals because audiences and media require different risk communication strategies (Covello et al. 1988b). Agencies should develop case studies of effective risk communication and publicize success stories (Chess and Hance 1989).

Different types of evaluation have varying levels of reliability. For example, findings from focus groups are qualitative (which cannot be generalized to a population) and need to be buttressed with quantitative measures of effectiveness (Desvouges and Smith 1988). However, such findings can also provide immediate feedback.

Provisions should be made to ensure evaluation results are explained and disseminated to improve risk communications (Kasperson and Rohrmann 1988). Decide on criteria for evaluation and implement the plan with appropriate follow-up measures (Bell 1989). Ten criteria for evaluating risk communication programs include: performing a needs appraisal; capturing how the program deals with risk complexity and social pluralism; examining the context of the risk; assessing the comprehensiveness of the program's efforts; assessing the timeliness of the communication; assessing the

interactiveness of the communication process; assessing the transfer of power; assessing ethical issues such as unintended adverse consequences; and assessing whether the program attempted to anticipate failure (Kasperson and Palmlund 1987).

6.7.4 Evaluating Information Programs

In the previous section it was pointed out that evaluation is a necessary component of program planning. In designing a communication program, communicators need to incorporate citizen input in the development and evaluation of public information programs (Roesner and Russell 1987). A broad range of interests should be consulted and involved in the design and implementation of an evaluation program (Kasperson and Rohrman 1988). For example, EPA policy includes forming a community leaders network at the onset of a risk communication project and incorporating evaluation strategies at that time (Morgan and Vlek 1988).

To gain the greatest level of citizen participation in evaluation, pretest all education materials and provide a time frame for releasing information. If the date is missed, give the public an explanation. It is important to differentiate between former and current risk problems and provide information about the possible range of issues that concern citizens (Pavlova and Luftig no date).

6.7.5 Checklist for Program Evaluation

The following checklist (Table 6-2) provides a simple means of reviewing a risk communication program to evaluate its adequacy. Bear in mind there is no "ideal" method to judge adequacy or effectiveness.

Table 6-2 Checklist for Reviewing a Risk Communication Program

Assessment of Content: For each activity assess the following.

1. Nature of the hazard.
2. Range of accidents.
3. Consequences of accidents.
4. Risk of accidents (probability).
5. Geographical distribution of threat.
6. High vulnerability groups.
7. Protective actions options.
8. Criteria to use protective actions.
9. How to implement actions.
10. Source of a warning.
11. How a warning will be made.
12. Pre-warning actions to enhance response.
13. Where to get more information.
14. Benefits associated with risks.

Assessment of Style: For each activity assess the following.

1. Is the information clear?
2. Is the information specific?
3. Is the information accurate?
4. Is the information consistent?
5. Is the information conveyed with certainty?
6. What is the general conceptual approach used?
7. Who is the target audience?

Assessment of Overall Program:

1. Is there a mix of information activities to inform different subgroups of the population?
   - transients?
   - foreign language speaking?
   - institutional or otherwise impaired?
2. Does the program use different " sources" to enhance credibility?
3. Is the information consistent across activities?

7. FINDINGS AND CONCLUSIONS FOR THE CSEPP

7.1 INTRODUCTION

In this final section we examine the recommendations in the research literature and current guidance manuals available to risk communicators, planners, agencies, and emergency personnel. We also return to address the questions about risk events posed earlier and to examine some issues pertinent to the CSEPP.

Although there are a number of recommendations made without empirical validation in the how-to literature, some methods appear significantly related to the solving of basic risk communication and to problems related to the CSEPP.

7.2 CITIZEN'S RIGHT TO KNOW

Democratic participation in the United States includes the inherent right of citizens to obtain relevant information about risks when they want that information. Right-to-know is embodied in both legal and ethical principles. This does not imply that citizens must use that right or that non-use implies consent or acceptance of the risk. Individuals differ in scope and public commitment that results in different interests and involvement in issues over time. The variations require different communication strategies in the CSEPP to maximize the effectiveness of emergency protection for affected populations. Communicating risks on a potential accident from the stockpiled chemical weapons needs to be done on an on-going basis until the munitions are destroyed. This is not a public relations incentive, but a public information program designed to provide the public with accurate, up-to-date information on risk issues.

7.3 ACCURATE INFORMATION ON RISKS

The second doctrine proceeds from the same democratic principle for right-to-know—that those who know or who suspect that they generate risks to a population have a fundamental duty to inform the affected parties about those risks. These two basic positions lead to a third conclusion. Those who communicate the risks to affected parties

are obligated to make that information as accurate and as relevant as possible to facilitate understanding of the risk and the consequences.

It is a false assumption to conclude that generating and disseminating factual information is enough to satisfy right-to-know principles, or even that facts satisfy the basic requirements for risk communication in general. In the truest sense, risk communication is an exchange of information or a dialogue between those that generate the risk and those that bear the risk through direct or indirect consequences. As noted in the following discussion of the questions presented in Chapter One, current implementation of this concept is not an exact science nor is it solely an art. There is no panacea to replace misguided efforts with a instant solutions. If trust has been lost in the past, the acknowledgment that both discussions and people can change may be difficult to admit for all affected parties, including communicators.

7.4 PRE-EMERGENCY COMMUNICATION PROGRAMS

As previously noted, risk communication covers a broad range of activities and timescales. One such activity is providing information and education to the public about potential accidents, including the nature of the hazard, ways of mitigating losses, and protective actions to take in an emergency. A second activity is providing emergency warnings to the public when an event is about to occur or is taking place. Other activities may also involve explaining an event to the public, even when no actual risk occurred to populations off site. Another way of describing these two functions is pre-emergency risk communication and emergency risk communication.

A risk communication program should provide as much relevant information as is possible to get the message across. This includes:

- **providing information on the hazard, including how it was identified and assessed,**
- **information on responding to the hazard, and,**
- **information on the management of the hazard.**

Relevant information to include on the hazard per-se covers the general nature of the hazard, when the hazard can occur, the range of events, the consequences of events, the probability or frequency of events, and the geographical distribution of hazard. Information on response includes defining protective action options, how to implement the actions, pre-

warning actions that can be taken at home to enhance response, and alerting groups particularly vulnerable to the hazard, such as pre-schools. Hazard management topics include identifying credible sources of a warning, how a warning will be made and carried out, coordinating protective action decision processes, and finding sources to further information about the risks (enhancing media relations, giving talk to civic groups, etc.). The style of the information presentation is best when communications are clear, specific, accurate, consistent, certain, and provide sufficient detail.

It is well documented that an overall risk communication system must have a mix of information activities and channels to inform different subgroups of the population about the risks. Among the subgroups that are often overlooked are mobile groups (travelers, recreationists, daily employees), individuals who only speak a foreign language, ethnic groups with different cultural norms from the residents, and institutional populations or groups with specific constraints, such as the physically or mentally impaired. It's also important to identify those persons diffused throughout the general population that may have difficulty responding on their own (the mobility or physically impaired).

Different sources of information serve to enhance credibility about the potential risk because any single source is not universally credible to all people. While official sources, such as the sheriff, may be considered highly reliable in one location, other sources, such as a respected priest, may have more influence in other locations. In addition, the information in a multi-faceted program must be consistent across various activities.

While the style and content of programs designed to provide general information as opposed to emergency information overlap, the mechanisms for diffusing information are more varied than similar. Emergency communications require a very rapid dissemination time designed for maximum short-term impact. On the other hand, pre-emergency mechanisms require a more restrained effort that must be maintained over time to stimulate understanding of the risk, not response. As a result, the format for emergency information will vary. It is important, however, that the content of emergency communication be built on and be consistent with the pre-emergency programs.

Six general questions about the interrelationship between pre-emergency and emergency communications that risk managers should be concerned with are addressed.

- **Does pre-emergency information reduce losses in a disaster by affecting the adoption of precautionary measures and taking of adaptive behaviors?**

In reviewing the empirical evidence we do not have a conclusive answer regarding whether or not a program actually makes a significant difference in reducing losses. Our most reasonable interpretation of the evidence, when considering the empirical and anecdotal events and practical wisdom, is that a good pre-emergency information program will reduce loss, although the specific amount cannot be estimated. Conversely a poor program will not likely make a great overall difference. Any program, when we shift to the individual as the focal point of attention, can impact an individual's behavior in an emergency. It is therefore important that a program minimizes the likelihood the program will create greater risks for the individual.

- **How much information is enough?**

There are no precise guidelines on how much information is needed to produce benefits from the program. It is clear that a program cannot provide either an overly simplistic amount of information nor an inundation of information. Most officials, however, underestimate the amount of information that the interested public will want. This suggests that a program needs to provide various levels of information geared towards differing desires of the public. In both pre-emergency and emergency communications the maxim should be, when in doubt give out more information. The idea of an information overload seems to less problematic than that of an information void.

- **What are the most effective combinations of information format and contents?**

Again there is no precise formula for designing the ultimate program. The literature suggests that one should not rely on a single mechanism for disseminating information. Rather, a program needs to have multiple formats and styles, but which conveys the same information content.

- **How should information be targeted to different sub-groups in society?**

Information definitely needs to be targeted toward differing subgroups of the population. People will have varying definitions of what is credible, what is understandable, and what will be remembered. The most important factors to consider in targeting information are age, language, and cultural differences.

Targeting can be achieved through a mix of information sources, channels and contents.

- **Does provision of information have unintended negative results?**

  Often officials are reluctant to provide information on risks to the public because they believe it will unnecessarily alarm people or produce negative effects. The idea that "crying-wolf" will decrease protective actions in future events which may be more critical has been shown to be false. There is no evidence to suggest that such effects actually occur. Instead such comments are probably excuses for not providing information. Furthermore, no evidence exists that information will have a negative effect on response to a hazard, even though the potential theoretically exists.

- **How often does information need to be updated and repeated?**

  The most effective programs are ones that are repetitive and provide information on an ongoing and updated basis. There is no substantive basis for suggesting how frequent a program must actively reinitiate efforts to communicate with the public. A single or one-shot effort, however, will likely have few benefits or impacts, unless the situation is clearly catastrophic.

7.5 IMPLEMENTATION OF FINDINGS INTO STRATEGIES FOR THE CSEPP

In this section we return to the questions introduced in Chapter One in light of the findings and recommendations from the study. Although not totally inclusive, the questions reflect the various issues that can arise in agency efforts to communicate risk information to affected publics or in activities involving the management of a crisis, presentation of a risk assessment, or negotiation of risk mitigation strategies with concerned communities. It is not our intent to answer the individual questions posed as each answer is unique to the specific situation and site. Instead, our intent is to provide a context in which a strategy to deal with such questions can be developed.

7.5.1 First Question

The first issue related to a storage tank of agent (HD-mustard) found leaking into the soil by agency personnel conducting a routine site investigation in a remote area of an Army depot. Although it was unclear when the leak occurred or how long the agent had been dispersing into the environment, the damage appeared related to the deterioration of a valve on the container holding the agent and probably would have leaked for only a short duration. After discovery, the release is reported to the EPA which is uncertain about possible health effects. The issue for the EPA and Army personnel involves communicating a possible risk to the public most likely affected. A related issue for both agencies is dealing with the media which may escalate the local issue into a national problem.

7.5.2 First Question: Discussion

Waiting for positive scientific confirmation of data to notify the public about possible health risks can devastate agency credibility, impair subsequent risk assessment efforts, and obstruct future risk management strategies, especially when the public perceives an agency is "foot-dragging." The public will construe the agency as incompetent, unprepared, faltering, deficient, or hesitant. Yet disclosing information of unconfirmed but potential health risks is problematic at best. Since the leaking agent was discovered by Army personnel, the situation could be interpreted by both the public and the media as the "tip of the iceberg" of a larger, existing problem kept hidden from outsiders for an undisclosed period of time. The uncertainty can lead to rumors and media sensationalism.

There is the additional concern of "crying-wolf" about a problem which in all aspects appears benign within the present confines of the investigation. If the release is within the category determined insignificant by legal standards, that is, when emissions are not required to be legally reported, agency management may assume that it is pointless to alarm (or overload) the public with such insignificant information. The debate then centers on the public's right-to-know versus need-to-know, an often bitter issue in risk communication.

From the empirical research it is clear that managing any potential risk involves both forthrightness and considerable diplomacy of agency personnel. To manage the immediate threat to credibility, both the public and the various media outlets should be kept adequately informed, in fact swamped, with all available related information.

In addition, credibility can be enhanced through agency actions that include:

- **informing local officials as one of the first steps;**
- **the use of high-level management personnel as spokespersons;**
- **the rapid deployment of information through media and other sources such as informal or targeted community groups;**
- **admitting uncertainty and/or refuting rumors when necessary;**
- **involving the community as early as possible in the decision-making process about possible risks, including the consequences of the immediate or delayed risk management decisions;**
- **listening to the audience and not making assumptions about what people do or do not already know or want to know.**

Although risk statistics carry neither positive nor negative value attachment, risk is most often viewed as having unfavorable consequences for the individual or group involved. Thus risk in the context of communication activities often takes on an adversarial perspective, resulting in misinterpretation and confusion as to the desired outcome of the communication. Recommending that an outside agency or third party assess the problem and the associated risks may enhance the credibility of the agencies involved as perceived by the public. Coordinated messages on the risk disseminated through many different channels at once are also effective in gaining attention and interest.

Positive media reporting has been found to reduce stress. The ability to gain the media's sympathetic attention can thus facilitate communicating the risks to the publics involved. Prior networking with media representatives can also help overcome some of the inaccuracies in media reports that stem from misinformation or lack of environmental education on risks and hazards. Making information packets available that describe the situation and provide names of third-party experts to help explain technical terms increases agency credibility while decreasing negative publicity. Having agency personnel readily available—with no "bouncing" of callers—to answer questions also improves credibility. Thus planning involves active commitment of resources to enhancing efforts to communicate risk issues by agency personnel.

7.5.3 Second Question

The second question relates to a different mode of discovery of a potential health threat. A local farmer perceives a problem exists with water from a well located near the perimeter of a military base where large tanks of chemicals are being stored. In addition, several of the farmer's livestock have died for unexplained reasons. The farmer charges

that agents leaking from the storage tanks into a nearby stream during heavy periods of rainfall are the cause of the problems. The local health department has investigated and found that some problems with the tanks do exist but the possible health effects to both humans and animals remain unconfirmed. The issue for the health agency is how to communicate uncertain findings to the public without raising alarm or unjustified concerns about health from the media, but which contain enough information to alert the public to possible health problems. In addition, the uncertainty about health affects may never be resolved because causation may never be determined.

7.5.4 Second Question: Discussion

The question reflects a growing concern among segments of the public about institutional integrity as well as competency. To influence public perceptions of an agency's credibility requires the build-up of trust over time with attention directed toward community involvement and the acknowledgment of public fears. When faced with uncertain findings, the best interests of both the agency and the public are served by publicizing the results as quickly as possible, readily admitting the uncertainty, and explaining the basis for the uncertainty.

There are several reasons for explicitly addressing the causality of the livestock deaths when discussing uncertainty. One, agreement on causality (e.g., the 'root cause') is often lacking among experts in making risk assessments. Admission by the agency that uncertainty exists provides not only a method for reducing criticism, but offers the opportunity for public involvement and input. In this case it may be possible to encourage farmers to assist in collecting information that may solve the mystery. Secondly, credibility is threatened through delay and not acknowledging potential guilt. Since time will be needed to determine the risk involved, as well as strategies to manage the threat, agency credibility will be enhanced if the public perceives the agency is actively searching for means to alleviate a possible threatening situation. Thirdly, rumors can be more easily refuted when the problem has been admitted and channels are open for dialogue on the risk. Strict denial of any causal link with be seen as an attempted cover-up of the truth and an unwillingness to get to the bottom of the problem by agency personnel.

The decision to require further testing or data collection before arranging to deny, reduce, or eliminate a risk is a valid concept understood by the majority of the publics and media outlets. What is not condoned is refusal of an agency to examine possible hazards whether they appear significant or otherwise. To place the problem in perspective and help reduce negative rumors about risks, hazard information should be launched as soon as

possible after a local occurrence of a hazard has been reported. The actual report of the event will generally increase sensitivity to the hazard and subsequent risk communication efforts may have a more positive impact on public perceptions of the threat itself.

It has been found that the multiple dimensions of hazard—risks, benefits, costs, and environmental impacts—do not converge into a single concept in the public's mind (Cvetkovich and Earle, no date). Neither have measures of risk—mortality, morbidity, and loss—been found related to information seeking or to the acquisition of mitigation knowledge by the public. Thus agencies must be sensitive to other aspects of risk communications rather than focusing solely on the objective considerations.

To determine what or how much information will be most useful to the publics involved, audience interest should be surveyed to determine the nature of specific concerns and to ascertain the mental models of causality they are using to describe the problem. These factors as well as attitudes toward governmental desire to control hazard and to communicate with the public were found significantly related to information seeking or acquisition of mitigation knowledge.

The problem of uncertainty is not a question of how much information should be conveyed but how to provide the most useful information without tying up agency resources unnecessarily. The objective of risk communication is to provide data for informed decision-making among all involved parties—risk generators, risk bearers and governmental or other involved entities.

7.5.5 Third Question

In the third question there is consensus that the legality of the actions are not in question. In this instance a small release of agent occurs during on-site incineration of a chemical weapons. The release is within normal exposure limits and the installation commander decides not to notify either the local health agency nor to inform the media or the public about the release. Two days later the press learns of the release and accuses the installation of 'cover-up.' The agency immediately loses credibility in not reporting the release to the public. How to overcome the loss of credibility then becomes an issue in communicating about the risk for the specific release and for future communication efforts.

7.5.6 Third Question: Discussion

The issue of credibility involves timely disclosure in releasing information to the public. Change is not likely to occur in the media's perceived responsibility as gatekeepers

or alarmists for agency actions. Plans prepared by an agency prior to an event, no matter how remote the occurrence, can alleviate delay and confusion in responding to such criticism. Having high-level spokespersons available to speak competently about the situation helps dispel the aura of agency ineptitude.

The goal of risk communication should not be to discredit the possibility of a risk or to avoid risk communication. Instead it should be to prepare other government agencies, the media and the public to the possibility of an incident. In this case the media and others should have been brought to the understanding that such an incident may occur despite low consequences or even probability. While this flies in the face of the normal wisdom of an agency which wants to only tell the public that a technology is safe, it is more in line with what the public expects from a credible organization. Accepting and involving the public as a legitimate and concerned partner in risk decision-making means the public should not be manipulated into accepting decisions that were made internally by agency management or through decisions designed to avoid further action.

Discussing forthrightly why initial decisions were taken not to inform the public can educate citizens in the risk management process, creating a more informed public able to distinguish levels of risk and consequent exposure. The aim of risk communication efforts is to provide information that empowers citizens to make knowledgeable decisions. Nor should the opportunity be overlooked following the exposure to inform the public about future risk and management strategies when media follow-up reports provide the chance to insert appropriate material for public education. The key is being able to provide material suitable for media needs with consideration on the agency's part for the constraints imposed on journalists by deadlines and other requirements, such as having access to experts themselves. Having prepared information packets further suggests agency competency in handling such situations.

7.5.7 Fourth Question

The fourth question includes the spectacular event involving a terrorist group's threat to release stored toxic chemicals through detonation if their demands are not met. Reporters anxious to cover this spectacular event immediately focus on negotiations while agency officials fume at the interference. The terrorists' manipulation of media representatives and agency personnel is evident as demands remain unmet. Meanwhile the risk to the public remains uncertain with a magnitude of potentially unparalleled threat both for the institution and to the surrounding community.

7.5.8 Fourth Question: Discussion

The most dreaded event for any agency is an unanticipated threat of unknown and potentially enormous magnitude that creates immediate convergence of representatives from various media outlets. From all accounts, we know that the media personnel will converge on any event that smacks of newsworthiness, especially if the event appears to have associated sensational factors. Moreover, the media may well interrupt actual negotiations or other planned agency strategies during the event.

Having a plan prepared for such emergencies with specific persons assigned to a public relations team and qualified and experienced personnel available to act as credible spokespersons is crucial to the eventual outcome. As Scanlon points out, both the agency and media frequently end up as hostages in such events.

Coordination among staff members and agencies associated in the event affects the public perception about correct handling of the situation. Having single spokespersons respond to media requests and discussing items internally before release to the media decreases conflict and helps maintain agency credibility. That single spokesperson, however, must get the message out through a variety of channels and elicit the support of credible sources of information to verify and confirm the official posture.

Providing information about the possible risk also educates the public about other consequences from a similar threat and can establish a framework for future discussions of risk issues should another volatile situation occur. It is also possible that some segments of the public may perceive the event as one demanding unusual outcomes such as entirely removing the risk source out of the community. Thus it is important to inform the public about agency constraints and responsibilities to avoid future confusion or antagonism. Agency spokespersons must be directed and forthright in approaching the public which requires preparation prior to such a situation, complemented with adequate resources and direction from higher level management.

7.5.9 Fifth Question

In this question no accident has occurred but citizens are demanding to have access to classified information about the quantities of chemicals stored at a military base adjacent to their community. In addition, citizens want information about the probability of accidents and/or releases from stored chemicals. The Army's official response is "We can't tell you—it's classified information." The response enrages the community while the base authorities feel unfairly blamed for the situation.

7.5.10 Fifth Question: Discussion

One of the most difficult situations that military base or agency officials must face is having to deal with a citizen group seeking information that cannot be revealed to them because the information has been "classified." Given the fact that the military is a public institution designed to protect citizens, the response is often interpreted with anger and charges of bureaucratic intimidation. Until such information is publicly available, communities will continue to feel like second-class citizens. The best solution is to allow citizens access to the material, an action that will need to be accomplished largely through agency or institutional change. Failing this, an alternative strategy would be to explain to the public the security need for the classification and the associated benefits as well as limitations.

7.5.11 Sixth Question

This question involves an actual exercise that is required by FEMA. Local officials must provide the media with reliable and accurate information about why the exercise is being conducted and what the potential risk is from various chemical accidents. Media representatives promise to present the information to the public, but officials are skeptical that local distrust will alter the material provided.

7.5.12 Sixth Question: Discussion

This requires a pro-active, integrated approach by emergency officials. Media packets provide excellent means of ready information. References to the documents in the packets enhances agency credibility and reliability in dealing with the situation. Media packets should include background materials that explain the concept and objectives of the CSEPP program, how the program was instigated and the Army's and FEMA's responsibilities in the program, how the program is administered locally, and what has been done or is proposed for future improvements. A media packet may consist of the following background information fact sheets:

1. **Background information on the Chemical Stockpile Disposal Program**
2. **History of the emergency planning for the CSEPP**
3. **A description of the plan/equipment upgrade activities**

4. An overview of the emergency planning program guidance
5. CAIRA planning objectives and activities
6. An overview of the CSEPP emergency concept plans
7. How CSEPP is structured at the federal levels including the role of the Joint Steering Committee and the six subcommittees
8. Technical support activities for the CSEPP
9. Program implementation at state, local, and installation levels
10. Descriptions of previous exercise scenarios.

Providing media representatives with materials to enhance their portrayal of the event also makes points with the media. Such materials in the packet might include photographs of the storage site, the various munitions at the site, the TEAD demilitarization plant or others that are constructed, the interior of the emergency operations center (EOC), the sensors and monitoring equipment used on post to establish levels of emissions, warning equipment, and examples of the protective equipment used by Army responders or other official emergency responders. Maps of the site might include depiction of the EPZ and the IRZ. Video tape materials might present examples of other storage sites, how data is analyzed, pilot plant operations, how an EOC operates, the Chemical Stockpile Agent Characteristics and Effects video produced for training emergency workers, an exercise recently completed, and the decontamination boundaries.

7.5.13 Seventh Question

In this question, local officials are about to disseminate tone alert radios to residences in the EPZ. Local citizens who have not been following the progress of the program are stunned to find out that they will have to have a radio in their homes. Officials must design a program that instructs residents on how the radio is used as well as inform them about the risks they should be prepared for. Officials are swamped by numerous requests for information and the multitude of questions that follows the announcement about the radios.

7.5.14 Seventh Question: Discussion

Be prepared. There is a need to get information out to the public well in an advance. For some residents, however, this will be their first actual involvement with the program.

The key is anticipating the most likely questions that residents will ask. Some questions may be as follows:

Where in the house is the best place to put the radio?
How will we know the radio is working?
What do I do if I think it's not working?
Will the radio interfere with television reception?
What if I refuse to take a special radio?
Will it be an inconvenience?
Will the radio go off accidentally?
Will it be used for emergencies other than chemical accidents?
Can I use the radio for other purposes?
Does it emit any harmful waves?
I already have a NOAA weather radio; why do I need this one?
Will it raise my electricity bill?
What if I want to move it to a different location?
Why do I need it when the sirens are next to my house?
Who else is getting radios?
I have difficulty hearing. Will it wake me up if I'm sleeping?
Who's paying for all these radios anyway?

In addressing some of the questions, specific references should be made to all groups in the population, such as the hearing impaired or non-English speaking individuals. Although some questions may seem irrelevant, the fact that people have asked questions indicates a degree of personalization about the situation. Anticipating what issues may be raised can be determined by discussions with community groups or addressing specific questions in media releases.

7.5.15 Eighth Question

The last question involved an actual release of chemical agent vapor emitted during incineration. The army installation has identified the incident as hazardous for off-post personnel and reported the release to the local emergency officials. However, there is very little time to notify the public that will be effected by the release. Local officials must move rapidly to alert the public to provide maximum protection.

7.5.16 Eighth Question: Discussion

Alert/notification messages are very important elements of the warning effort. The ability to have people comply with recommended protective actions in particularly important in a fast moving event when the first warning message must convey all the information to help the public make appropriate decisions. Planning efforts should be undertaken to prepare messages with the desired clarity, precision and authority.

One of the clearest and most consistent conclusions of research is people's response to warnings is that the hazard notification message is one of the most critical factors in determining the effectiveness of a warning system. It is the content and style of the hazard notification message which largely shapes protective action behavior. Five factors are essential to the content of a hazard notification message:

a) a description of hazard or risk,
b) the location of the origin of hazard,
c) telling the respondents to take protective action,
d) the official source of the hazard notification message, and
e) the time available to respond.

The hazard notification message should be written in a style which clearly conveys to the respondents the potential hazard. Five factors are important to remember regarding the style of the notification message. These are:

a) specificity,
b) consistency;
c) accuracy;
d) certainty; and
e) clarity.

Hazard notification message should be very specific as to the character of the hazard and how much time the respondents have to engage in protective actions. Messages must also provide consistent information within a single message as well as across different messages as to the actions being taken. In later messages, references should be made to the information in the previous message. Clearly stating all new or additional information

available and pointing out all changes from the previous messages, preferably with a brief explanation of the basis for such changes, avoids inconsistencies across different messages.

Certainty in warning messages extends beyond actual message content to the actual style of delivery by the communicator. The warning message should be spoken as if the person delivering the warning believes and is certain about what is being said in the message. In additional, notification messages must be clearly worded in a language that can be understood by all respondents and which avoids the use of technical jargon.

Hazard notification message must contain timely and accurate information. If the respondents in a community suspect that they are not receiving the "whole truth," about the chemical accident they may not believe the content of the message and/or choose not to undertake the required emergency response activities. In general, increased frequency of hazard notification messages inform more respondents in a shorter period of time.

7.6 ANALYSIS AND CONCLUSIONS FOR THE CSEPP

When the question sets are examined the crucial differences in how the issues are framed by the public, media and the agencies become evident. In the first situation the risk was defined as an agency problem by all parties whereas in the second and third, the incidents were defined by public or media sources as agency problems. Agency actions did not reflect that assessment. The fourth question was defined by the media not as a criminal event but as a newsmaking situation with the potential risk secondary to the media's interest in the event as a sensational "newspeg." The agencies involved, however, defined the crisis as much more serious with the media perceived as interfering. The fifth question reflects the issues of community right-to-know versus need-to-know as well as control of information that includes changing institutional structures. The sixth and seventh questions relate to the need for planning for anticipated media needs. The seventh question indicates some of the questions that officials should be prepared to answer even in routine preparations. The last question set indicates what may happen should a release occur during storage or incineration, and addresses the need for timely, accurate notification and how those warnings need to be disseminated to ensure maximum protection for the public at risk.

A general theme throughout the situations is that risk assessment and management are part of the problem in the risk communication process. The assumption that management is part of the communication process compounds the uncertainty about definition of the level of risk, who should be informed, and when that information should be

given to the public. The communication problem for the CSEPP is a complicated process involving risk generators, risk bearers and associated interested parties such as the media, and concerned citizen groups. A basic understanding of how the risk assessment for the chemical stockpile was conducted is critical to effective risk communication for the CSEPP.

Risk issues have traditionally been defined as agency problems in which the risk, once assessed, must be communicated to the public, that is, one-way communication, in monologue, not dialogue, form. Through planning and active participation in opportunities that educate the public about the risks related to the CSEPP, the situations with citizen questions could be changed to continuing dialogues and the risk problems receive active participation from both sides. The side effect of such actions, however, is that eventual closure on the problem would be difficult. Demanding closure on problems appears to be one of the key elements affecting the unwanted but very real environmental risk communication problems. The CSEPP will eventually have closure with destruction of the chemical stockpile, but that closure is somewhat uncertain in timing and methodology. It has been shown that publics adjust to changes in the environment without demanding elimination of the risk. However, the assumption that the public demands zero-risk as an ultimate solution persist in risk communication efforts.

How to maintain credibility of agency actions and personnel in an era of increasing agency scrutiny remains a key issue for managers in the CSEPP. Coordinated networking and planning strategies between agencies with media outlets prior to an event appears critical when focusing on communicating about risks and proposed mitigation tactics. How different perceptions among various publics frame risk communication issues should be identified and debated long before a risk situation becomes critical.

Perhaps the most prominent risk communication issue involves the discrepancy between supporters of a right-to-know policy versus those advocating information of a need-to-know basis. Those claiming need-to-know base their assumptions on the feared consequences of information overload on public perceptions of risk. The fear is that too much information about risks will lull the public into ignoring avoidable risks (such as reducing injury by wearing seatbelts) by focusing on the most sensational but infrequent events that command the greatest media attention.

Who controls information remains a factor in negotiation of risk communications. The "limit/no limit" controversy can be expected to decrease as communication facilities expand the resources of both individuals and agencies to effectively access information sources. However, the techniques for dialogue needed for such communication can be developed now by agencies committed to sharing information immediately rather than

selectively with affected publics. Experience repeatedly demonstrates that a lack of early and continuing involvement is a characteristic source of failure for public participation.

The contentious issues of defining or interpreting risks as well as assuming responsibility plague risk communication efforts. Agencies are typically unwilling to accept public challenges to their credibility and skills. It is clear that certain factors of risk trigger intense objections among segments of the public no matter how scientific, unbiased and objective the assessment of the risks. These factors are especially noticeable for hazards whose adverse effects are uncontrollable, dreaded, catastrophic, fatal rather than injurious, not offset by compensating benefits, and delayed in time so the risks are borne by future generations (Slovic, 1986). Public perceptions of risk often include subjective evaluations beyond those factors used in rational or scientific decision making, such as the perceived responsibility, credibility, and trust of institutions, agencies, and journalists. Determining the factors that are the most important in the assessment of the risk will continue to necessitate dialogue between all parties involved. For example, "quick fixes," such as comparisons that contrast chemical agent accidents to that of driving or smoking will not convince the public that either storage or incineration is safe.

What are perceived as public warning needs may need further examination as public knowledge evolves through education and experience with risks. The concepts of accidents as signals indicates that when informed about a particular hazard, people's concern will generalize beyond the immediate problem to other related hazards. The factors that divide the public's individual orientation toward risks from that of the larger societal perspective will need further elucidation and concern among risk communicators for the CSEPP. Although it is advantageous to the nation as a whole to have the weapons eliminated, that perspective will not be held by all residents located near the stockpile sites.

Media coverage of risks can be expected to continue as spotty and uneven. Moreover, the media's perceived responsibility as the traditional "gatekeeper" is not likely to diminish in the future. Concerns about media bias, ethics, and responsibilities in reporting need to be addressed in context with the traditions and constraints of media reports and much of the technical information that is available in the CSEPP needs to be repackaged before the media will use it. The interface as well as linkages between the media as a channel and the media as a source needs examination to facilitate risk communication.

Public education has been suggested as an important component in understanding risks. When to begin education about risk and hazard, at what level of detail risks should be discussed, what methods to bring about public education and ultimately, who should be responsible for public education are all part of the public education agenda. Concentrating

on targeted audiences or focus groups to enhance education of those most affected has had some success for agencies with available resources.

In a world of increasing risks, appropriate and continual dialogue with affected publics about risks should be one of the foremost concerns of the CSEPP. How that information is interpreted or modified by existing beliefs remains problematical. The fear that too may warnings can hamper emergency communications appears ill-founded. Results of assessments of risks in language and visuals that are easily understood by the majority of publics is a basic necessity in risk communication for the CSEPP.

Effective public participation depends substantially upon the development of technical and analytic resources in agencies responsible for the public welfare and upon institutional means to act upon increased knowledge. Members of the public will continue to differ in arenas and scope of involvement, suggesting differing "thresholds" of involvement and requiring alternative communication strategies. Although a large array of participation technique exists, current knowledge does not allow for successful prediction as to which strategies are likely to be effective under what conditions.

As CSEPP is implemented, risk communicators are likely to face increasing pressure to present risk issues and respond to risk related questions raised by various parties and constituencies. Whether acting alone or with others, managers of public and private agencies, industry representatives and governmental bodies must accept that media communications outlets will significantly influence the agenda of most risk communication efforts. Furthermore, newer forms of communications will continue to alter methods used to translate assessments of risks for risk management. Immediate access to data via personal computers places managers in the position of making immediate decisions about conveying information about risks.

It is likely that some incidents have occurred at the stockpile sites that have led to some erosion in public confidence in those parties and agencies participating in emergency management. To regain and/or enhance credibility and trust will require changes and modifications that can only be instituted through structural or institutional change—a process which appears undeniable, but not impossible in the CSEPP.

Appendix A

RISK COMMUNICATION REFERENCES

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Appendix B

USEFUL SOURCES

Risk Communication

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Appendix C

Basic Library of CSEPP Documents

The purpose of this bibliography is to provide a fairly comprehensive listing of reports and publications concerning the CSEPP program for chemical agent accidents. It is not intended to be a bibliography on chemical agent disposal, nor an inventory of all literature that may have implications for emergency preparedness. Furthermore, it does not inventory emergency plans at each site. It represents a core library of materials that an emergency manager, planner, or trainer interested in details about CSEPP may wish to consult for basic information. These sources will contain many references should more detailed information be needed about a specific topic. To obtain copies of these documents, contact FEMA Headquarters or the U.S. Department of the Army.

CSEPP LEGISLATION AND REGULATIONS

Federal Emergency Management Agency and U.S. Department of the Army *Memorandum of Understanding (MOU)*, August 1988. This MOU between FEMA and the U.S. Department of the Army created the CSEPP and identified the Agencies' respective areas of responsibility.

Public Law 99-145 (50 USC 1521). *Defense Authorization Act for FY86*, U.S. Congress, Washington, DC. This law required the Secretary of Defense to dispose of the unitary agent stockpile while providing "maximum protection for the environment, the general public, and the personnel who are involved in [such] destruction."

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RELATED LEGISLATION AND REGULATIONS

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POLICY PAPERS

CSEPP Policy Paper #1, *Definition of Maximum Protection*, May 7, 1991. This Policy Paper provides the operational definition of "maximum protection" for the CSEPP.

CSEPP Policy Paper #2, *Environmental Sampling to Determine Agent Contamination*, September 30, 1993. This Policy Paper identifies roles and responsibilities for agent monitoring activities in a chemical event.

CSEPP Policy Paper #5, *County Public Information Officers in CSEPP*, December 11, 1992. This Policy Paper allows Immediate Response Zone Couties to hire CSEPP-funded Public Information Officers.

CSEPP Policy Paper #7, *Interim Policy Regarding Offpost Meteorological Towers for CSEPP*, March 26, 1993. This Policy Paper allows CSEPP jurisdictions to purchase a limited number of wind monitoring devices for use offpost.

CSEPP Policy Paper #8, *Review of Exercise Initiating Events,* April 23, 1993. This Policy Paper describes the process to be used for approval of the initiating event for the CSEPP exercises.

CSEPP Policy Paper #9, *Public Information in Connection with CSEPP Exercises,* April 23, 1993. This Policy Paper describes the type of public information needed for CSEPP exercises.

CSEPP Policy Paper #11, *Compensation for Volunteer CSEPP Exercise Participants*, September 10, 1993. This Policy Paper outlines the concept for compensating CSEPP exercise participants.

CSEPP Policy Paper #12, *CSEPP Exercises*, March 2, 1994. This Policy Paper promulgates the February, 1994, exercise policies, procedures, and objectives document.

Note: Policy Papers #3, 6, and 10 have not been issued. Policy Paper #4, *Roles and Responsibilities of the Joint Steering Committee Subcommittees*, March 3, 1992, is no longer in effect.

GENERAL PROGRAM DOCUMENTS

Argonne National Laboratory. *The Chemical Stockpile Emergency Preparedness Program Management Plan*, U.S. Department of the Army and Federal Emergency Management Agency, March 1990.

Oak Ridge National Laboratory and Schneider Engineers. *Planning Guidance for the Chemical Stockpile Disposal Program Final Draft*, U.S. Department of the Army and Federal Emergency Management Agency, November 25, 1992.

Appendix A	Planning Guidelines for Command and Control
Appendix B	Planning Guidelines for EOC Location, Design, and Equipment
Appendix C	Communications Support Network: System Design Criteria and Evaluation Guide
Appendix D	Planning Guidelines for Protective Action Decision Making
Appendix E	Planning Guidelines for Protective Actions and Responses
Appendix F	Public Alert and Notification Systems: System Design Criteria and Evaluation Guide
Appendix G	Planning Guidelines for Traffic and Access Control
Appendix H	Planning Guidelines for Emergency Support Operations (Interim)
Appendix I	Planning Guidelines for Emergency Medical Services (Draft)
Appendix J	Planning Guidelines for Public Education and Information
Appendix K	Planning Guidelines for Evacuee Support
Appendix L	Planning Guidelines for Response-Phase Decontamination
Appendix M	Planning Guidelines for Recovery-Phase Activities (Draft)
Appendix N	Functional Requirements For the CSEPP Automated Emergency Management Information System.

National CSEPP Benchmarks, May 3, 1993. This paper provides benchmarks against which to assess capabilities and funding requests.

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Federal Emergency Management Agency and U.S. Department of the Army. *Reaffirmation of Federal Emergency Management Agency and U.S. Department of Army Memorandum of Understanding (MOU),* January 1993. This document re-confirmed the two agencies' commitment to the CSEPP and to the division of responsibilities under the original MOU.

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Letter from Deputy for Chemical Demilitarization to the Deputy Associate Director, Federal Emergency Management Agency, May 23, 1994, regarding personal protective equipment.

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Appendix D

General and Detailed Facts About...

Mustard Agents (H, HD, and HT); Nerve Agents GA and GB; Nerve Agent VX; and Lewisite (L)

Developed by U.S. Army Environmental Hygiene Agency and the CSEPP Sub-Committee on Reentry Restoration.

CSEPP

CSEPP: Alert & Notification

THE EMERGENCY BROADCAST / ALERT SYSTEM warns and informs a wider audience. Emergency messages on protective or precautionary actions to protect you and your family and neighbors will be broadcast over radio and TV stations.

ROUTE ALERTING procedures, such as loud speakers in shopping centers or on moving vehicles, may be used -- particularly in areas not equipped with outdoor sirens and indoor tone alert radios.

WHAT SHOULD YOU DO?

After the initial alert tone, warning systems will tell you what to do or instruct you to turn to your local Emergency Broadcast / Alert System for further information. For your health and safety and that of your family, your job is to follow the instructions given.
In communities near this country's eight stockpiles of obsolete chemical munitions, local officials have developed emergency preparedness plans that address rapid alert notification. If a stockpile accident or other emergency threatens your community, y ou will be warned that an accident has occurred and told what protective measures you should take.

Depending upon where you live or work, you may be alerted in a variety of ways:

- SIRENS , with voice capability, alert those close to the Army installation. Engineering studies determine where sirens are installed to ensure that everyone close to the stockpile will be able to hear the emergency warning and instructions.

- TONE ALERT RADIOS deliver warning messages indooors in the

area within a six to nine-mile radius of the stockpile. Tone alert radios will be in homes, hospitals, nursing homes, schools and other special facilities close to the Army installation.

Updated: January 24, 1998

CSEPP

CSEPP: Protective Measures

PROTECTIVE MEASURES are actions we take to safeguard ourselves and family members from harm. We take these actions every day -- at work and at play. For example, we buckle seatbelts in cars and airplanes to protect us in the event of an accident. Some of us wear protective clothing while doing our jobs or playing sports -- safety glasses, steel toed boots, helmets, protective pads, to name a few.

There are other protective measures you may already have heard about or will soon. These protective measures may be necessary in the event of an emergency -- such as a flood or tornado or a highway, railway or industrial plant accident -- that threatens your community. The most common emergency protective measures are evacuation and shelter-in-place.

EVACUATION means to leave the area of actual or potential hazard. Evacuation may be precautionary or responsive in nature. Plans and procedures are carefully developed to avoid confusion and get people out of an area safely and quickly.

SHELTER-IN-PLACE means to stay indoors -- in homes, schools, businesses, public buildings. It includes additional precautions such as turning off air conditioners and ventilation systems and closing all windows and doors.

Evacuation and shelter-in-place may be necessary in the unlikely event a chemical stockpile accident threatens your community.

HOW ARE PROTECTIVE MEASURES DETERMINED?

Your community has plans and procedures in place, based on its unique needs and considerations. These plans and procedures are determined by the specific agents stored at the near-by Army installation, likely weather conditions, terrain, road systems and other factors. Computers help

community leaders evaluate and select the best protective measures for specific accident situations. In an actual chemical stockpile emergency, computers will rapidly provide information (such as the agent involved and wind direction and speed) and recall the pre-selected protective actions your local officials have determined, in advance, will best protect the public. But, your community's officials, not computers, will decide what protective actions to recommend to you and your neighbors.

Protective measures are based on two planning zones -- the Immediate Response Zone and the Protective Action Zone. These zones were developed for emergency planning purposes and do not necessarily follow political boundaries. The boundaries of each zone and the distance from the stockpile vary at each location since these zones were drawn following risk analyses that took into account the specific types of agents and munitions stored and local weather and geographic conditions.

The Immediate Response Zone is the area closest to the site where chemical munitions and agents are being stored until they can be destroyed. This zone, usually within a six to nine-mile radius of the stockpile, would require the quickest warning and response. People living or working in this zone may need to take protective measures quickly.

The Protective Action Zone is the area immediately beyond the Immediate Response Zone. This zone extends to a radius of six to 31 miles from the stockpile. Protective measures may be necessary in this zone, but, there would be more time for warning and response.

If a stockpile accident or other emergency threatens your community, you will be alerted that an accident has occurred and told what protective measures you should take. Emergency messages will be broadcast over radio and TV Emergency Broadcast / Alert Systems and/or over loud speakers. Sirens and tone alert radios in Immediate Response Zones will alert and warn residents of an accident at the Army installation.

WHAT SHOULD YOU DO?

If you live or work in your community's Immediate Response Zone or Protective Action Zone, you need to know what protective measures may be called for and what actions you may need to take.

If an evacuation is called for, you'll be told what routes to take and the locations of centers that will provide food, shelter and other necessities.

If shelter-in-place is recommended, you will be told exactly what to do until the danger is past or until conditions indicate that an alternative protective action is called for. Your JOB is to stay calm and immediately follow the protective measures recommended by your local officials and emergency managers. You will be told when it is safe to return to the evacuated area or to discontinue shelter-in-place. It's a good id ea to know which routes are designated evacuation routes before an emergency situation happens.

Updated: January 24, 1998

CSEPP

CSEPP: Community Plans

Emergency planning takes into account the potential needs of the general public, special populations and individuals in your community. Plans must be made to protect schoolchildren, patients confined to hospitals, non-English speaking persons, retirement center residents, disabled or mobility-impaired individuals and even those who may be visiting or traveling through the community.

Each community makes emergency plans on the basis of its own unique needs and considerations. Planners consider the specific agents stored at the near-by installation, potential stockpile accidents that could put the off-post community at risk, various weather conditions, terrain, road systems and other site-specific factors. Computers help community leaders evaluate and select the best protective measures for specific accident situations.

In the unlikely event of an actual chemical agent emergency, computers will rapidly provide information (such as the agent involved and wind direction and speed) and recall pre-selected protective actions local officials have determined will best protect you and your family and neighbors. But your community's officials, not computers, will decide what protective actions to recommend to you and your neighbors.

Updated: January 24, 1998

CSEPP

CSEPP: What Now?

You can prepare your family for an emergency now by doing the following:

- complete a family emergency plan by finding out what zones your home, jobs and schools are in and the host facility information including evacuation routes;

- notify your local emergency management agency of anyone in your family who would have special needs in an emergency;

- put together a family emergency supplies kit containing six basics -- water, food, first aid supplies, clothing and bedding, tools and special items. Keep items you would most likely need during an evacuation in an easy-to-carry container such as a large, covered trash can, a camping backpack or a duffel bag; and

- call your local emergency management agency with any questions.

Updated: January 24, 1998

Initiatives

- REP Database
- REP Guidance for Providing Emergency Information and Instructions to the Public for Radiological Emergencies Using the New Emergency Alert System
- REP Tabletop Exercise
- REP Program Strategic Review

FEMA Radiological Emergency Preparedness Banner

REP Database

FEMA is developing a REP database in conjunction with FEMA Region VI and the Regional Assistance Committee Chairs Advisory Committee. The system will be designed to incorporate: site information, the exercise planning module and document not only Deficiencies and Areas Requiring Corrective Action but their underlying causes. This capability will allow FEMA to analyze national and regional trends.

Updated: July 11, 2001

Activities

Federal Radiological Preparedness Coordinating Committee (FRPCC)

In 1982, the FRPCC was established under 44 CFR 351in order to coordinate all Federal responsibilities for assisting State and local governments in emergency planning and preparedness for peacetime nuclear emergencies and to enhance Federal response planning. There are now 15 Federal agencies with membership on the FRPCC; FEMA is the chair.

The FRPCC performs the following functions:

- Assists the Director of FEMA in providing policy direction with respect to Federal assistance to State and local governments in their radiological emergency planning and preparedness activities.
- Establishes subcommittees to aid in carrying out its functions. Current subcommittees include Training, Offsite Instrumentation, Transportation, and Federal Response.
- Assists FEMA in resolving issues relating to the granting of final approval, under 44 CFR 350, of a State radiological emergency preparedness plan.

- Coordinates research and study efforts of its member agencies relative to State and local government radiological emergency preparedness to ensure minimum duplication and maximum benefits to State and local governments.

Conference of Radiation Control Program Directors (CRCPD)

The Conference of Radiation Control Program Directors, Inc. (CRCPD) is a nonprofit organization made up of individuals in State and local government who regulate and control the use of radiation sources, and of individuals, regardless of employer affiliation, who have expressed an interest in radiation protection. The CRCPD was formed in 1968.

The objective of the CRCPD are to promote radiological health in all aspects and phases; to encourage and promote cooperative enforcement programs with Federal agencies and between related enforcement agencies within each State; to encourage the interchange of experience among radiation control programs; to collect and make accessible to the membership of the CRCPD such information and data as might be of assistance to them in the proper fulfillment of their duties; to promote and foster uniformity of radiation control laws and regulation; to encourage and support programs which will contribute to radiation control for all; to assist the membership in their technical work and development; and to exercise leadership with radiation control professionals and consumers in radiation control development and action.

Regional Assistance Committee Chairs Advisory Committee (RACCAC)

The Regional Assistance Committee (RAC) Chairs Advisory Council, or RAC AC, was established to provide a vehicle for sharing REP and non-REP Program related information among RAC Chairpersons and to provide recommendations to the Preparedness, Training, and Exercises Directorate (PTE) for developing and modifying program policy and guidance. As a corollary responsibility, the RAC AC provides technical expertise to the Federal Radiological Preparedness

Coordinating Committee (FRPCC), as needed. The RAC AC membership consists of the nine RAC Chairs, the Chairperson of the FRPCC, and the Headquarters REP Branch Chief. The RAC AC elects a Chairperson and Vice-chairperson to serve one-year terms. The 1999 RAC AC Chairperson is Lawrence Robertson, Region IV RAC Chair, and the Vice-chairperson is Daniel McElhinney, Region I RAC Chair. The RAC AC meets quarterly to address issues and conflicts identified by FEMA and other interested parties and identify inconsistencies in the development, interpretation, and implementation of REP policy and guidance.

Updated: August 3, 1999

FEMA Rule 44 of the Code of Federal Regulations Part 351

Radiological Planning and Preparedness Final Regulations
March 11, 1982

Subpart A -- General
Sections:

Subpart B -- Federal Radiological Preparedness Coordinating Committee and Regional Assistance Committees

Subpart C -- Interagency Assignments

Authorities: 5 U.S.C. 552: Reorganization Plan No. 3, 1978, 43 FR 41943:

Executive Order 12127, March 31, 1979, 44 FR 43239: Executive Order 12148, July 20, 1979, 44 FR 43239: Executive Order 12241, September 29, 1980, 45 FR 64879: President's Directive of December 7, 1979.

Subpart A -- General

351.1 Purpose

This part sets out Federal agency roles and assigns tasks regarding Federal assistance to State and local governments in their radiological emergency planning and preparedness activities. Assignments in this part are applicable to radiological accidents at fixed nuclear facilities and transportation accidents involving radioactive materials.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 351

351.2 Scope

The emergency planning and preparedness responsibilities covered by this part relate to consequences and activities which extend beyond the boundaries of any fixed nuclear facility with a potential for serious consequences and the area affected by a transportation accident involving radioactive materials.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 351

351.3 Limitation of Scope

(a) This part covers Federal agency assignments and responsibilities in connection with State and local emergency plans and preparedness measures. It does not set forth criteria used in the review and approval of these plans and does not include any of the requirements associated with FEMA findings and determinations on the adequacy of State and local government radiological emergency preparedness. FEMA has published a separate proposed rule on procedures and criteria for reviewing and approving these plans and preapredness capabilities (45 FR 42341). Furthermore, this part does not set forth Federal agency responsibilities or capabilities for responding to an accident at a fixed nuclear facility or a transportation accident involving radioactive materials. These responsibilities are addressed in the "Master Plan" as developed by FEMA in coordination with other designated Federal agencies. See "National Radiological Emergency Preparedness/Response Plan for Commercial Nuclear Power Plant Accidents (Master Plan)," (45 FR 84910, December 23, 1980).

(b) Nothing in this part authorizes access to or disclosure of classified information required to be protected in accordance with Federal law or regulation in the interest of national security.

Updated: June 11, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart B -- Federal Radiological Preparedness Coordinating Committee and Regional Assistance Committees

351.10 Eastablishment of committees

(a) The Federal Radiological Preparedness Coordinating Committee (FRPCC) consists of the Federal Emergency Management Agency, which chairs the Committee, the Nuclear Regulatory Commission, Environmental Protection Agency, Department of Health and Human Services, Department of Energy, Department of Transportation, Department of Defense, United States Department of Agriculture, Department of Commerce, and, where appropriate and on an ad hoc basis, other Federal departments and agencies. In chairing the committee, FEMA will be responsible for assuring that all agency assignments described in this rule are coordinated through the Committee and carried out with or on behalf of State and local governments.

(b) The Regional Assistance Committees (RACs), one in each of 10 standard Federal regions*, consists of a FEMA Regional representative who chairs the Committee and representatives from the Nuclear Regulatory Commission, Environmental Protection Agency, Department of Health and Human Services, Department of Energy, Departmnet of Transportation, United States Department of Agriculture, Department of Commerce and other Federal agencies such as the Department of Defense, as appropriate. The FEMA Chairperson of the RACs will provide guidance and orientation to other agency members to assist them in carrying out their functions.

** I (Boston), II (New York), III (Philadelphia), IV (Atlanta), V (Chicago), VI*

(Dallas), VII (Kansas City), VIII (Denver), IX (San Francisco), X (Seattle).

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart B -- Federal Radiological Preparedness Coordinating Committee and Regional Assistance Committees

351.11 Functions of committees

(a) The FRPCC shall assist FEMA in providing policy direction for the program of Federal assistance to State and local governments in their radiological emergency planning and preparedness activities. The FRPCC will establish subcommittees to aid in carrying out its functions; e.g., research, training, emergency instrumentation, transportation, information, education and Federal response. The FRPCC will assist FEMA in resolving issues relating to granting of final FEMA approval of a State plan. The FRPCC will coordinate research and study efforts of its member agencies related to State and local government radiological emergency preparedness to assure minimum duplication and maximum benefits to State and local governments. The FRPCC will also assure that the research efforts of its member agencies are coordinated with the Interagency Radiation Research Committee.

(b) The RACs will assist State and local government officials in the development of their radiological emergency plans and will review these plans and observe exercises to evaluate adequacy of the plans. Each Federal agency member of the RACs will support the functions of these committees by becoming knowledegeable of Federal planning and guidance related to State and local radiological emergency plan, of their counterpart State organizations and personnel, where their agency can assist in improving the preparedness and by participating in RAC meetings.

Updated: June 10, 1997

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations

Part 351

Subpart C -- Interagency Assignments

351.20 The Federal Emergency Management Agency

(a) Establish policy and provide leadership via the FRPCC in the coordination of all Federal assistance and guidance to State and local governments for developing, reviewing, assessing, and testing the State and local radiological emergency plans.

(b) Issue guidance in cooperation with other Federal agencies concerning their responsibilities for providing radiological emergency planning and preparedness assistance to State and local governments.

(c) Foster cooperation of industry technical societies, Federal agencies and other constituencies in the radiological emergency planning and preparedness of State and local governments.

(d) Develop and promulgate preparedness criteria and guidance to State and local governments, in coordination with other Federal agencies, for the preparation, review and testing of State and local radiological emergency plans.

(e) Provide assistance to State and local governments in the preparation, review and testing of radiological emergency plans.

(f) Assess, with the assistance of other Federal agencies, the adequacy of State and local government emergency plans and the capability of the State and local government officials to implement them (e.g., adequacy and maintenance of equipment, procedures, training,

resources, staffing levels and qualifications) and report the findings and determinations to NRC.

(g) Review and approve State radiological emergency plans and preparedness in accordance with FEMA procedures in 44 CFR Part 350.

(h) Develop, implement and maintain a program of public education and information to support State and local radiological emergency plans and preparedness.

(i) Develop and manage a radiological emergency response training program to meet State and local needs, using technical expertise and resources of other involved agencies. Develop and field test exercise materials and coordinate the Federal assistance required by States and localities in conducting exercises, including guidance for Federal observers.

(j) Develop, with NRC and other Federal Agencies, representative scenarios from which NRC licensed facility operators and State and local governments may select for use in testing and exercising radiological emergency plans.

(k) Issue guidance for establishment of State and local emergency instrumentation systems for radiation detection and measurement.

(l) Provide guidance and assistance, in coordination with NRC and HHS, to State and local governments concerning the storage and distribution of radioprotective substances and prophylactic use of drugs (e.g., potassium iodide) to reduce the radiation dose to speific organs as a result of radiological emergencies.

Updated: July 7, 1998

FEMA Rule 44 of the Code of Federal Regulations Part 350

Review and Approval of State and Local Radiological Emergency Plans and Preparedness
Final Rule
September 28, 1983

Sections:

350.1 Purpose

The purpose of the regulation in this part is to establish policy and procedures for review and approval by the Federal Emergency Management Agency (FEMA) of State and local emergency plans and preparedness for offsite effects of a radiological emergency which may occur at a commercial nuclear power facility. Review and approval of these plans and preparedness involves preparation of findings and determinations of the adequacy of plans and capabilities of State and local governments to effectively implement the plans.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 350

350.2 Definitions

As used in this part, the following terms are defined:
(a) *Director* means the Director, FEMA, or designee;
(b) *Regional Director* means a Regional Director of FEMA, or designee;
(c) *Associate Director* means the Associate Director, State and Local Programs and Support, FEMA, or designee;
(d) *FEMA* means the Federal Emergency Management Agency;
(e) *NRC* means the Nuclear Regulatory Commission;
(f) *EPZ* means Emergency Planning Zone.
(g) *Emergency Planning Zone (EPZ)* is a generic area around a commercial nuclear facility used to assist in offsite emergency planning and the development of a significant response base. For commercial nuclear power plants, EPZs of about 10 and 50 miles are delineated for the plume and ingestion exposure pathways, respectively.
(h) *Plume Exposure Pathway* refers to whole body external exposure to gamma radiation from the plume and from deposited materials and inhalation exposure from the passing radioactive plume. The duration of primary exposures could range in length from hours to days.
(i) *Ingestion Exposure Pathway* refers to exposure primarily from ingestion of water or foods such as milk and fresh vegetables that have been contaminated with radiation. The duration of primary exopsure could range in length from hours to months.
(j) *Full participation* refers to an exercise in which: (1) State and local government emergency personnel are engaged in sufficient numbers to verify the capability to respond to the actions required by the accident scenario; (2) the integrated capabilitity to adequately assess abd respond to an accident at a commercial nuclear power plant is tested; (3) the implementation of the observable portions of State and/or local plans is tested.
(k) *Partial Participation* refers to the engagement of State and local government emergency personnel in an exercise sufficient to adequately test direction and control functions for protective action decisionmaking related to emergency action levels and communication capabilities among affected State and local governments and the licensee.
(l) *Remedial Exercise* is one tha tests deficiencies of previous joint exercise that are considered significant enough to impact on the public health and safety.

(m) *Local Government* refers to boroughs, cities, counties, municipalities, parishes, towns, townships, and other local jurisdictions within the plume exposure pathway EPZ when any of these entities has specific roles in emergency planning and preparedness in the EPZ.
(n) *Site* refers to the location at which there is one or more commercioal nuclear power plants. A nuclear power plant is synonymous with a nuclear power facility.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.3 Background

(a) On December 7, 1979, the President directed the Director of FEMA to take the lead in State and local emergency planning and preparedness activities with respect to nuclear power facilities. This included a revie of the existing emergency plans both in States with operating ractors and those with plants scheduled for operation in the near future.

(b) This assignment was given to FEMA because of its responsibilities under Executive Order 12148 to establish Federal policies for and coordinate civil emergency planning, management and assistance functions and to represent the President in working with State and local governments and private sector to stimulate vigorous participation in civil emergency preparedness programs. Under Section 201 of the Disaster Relief Act of 1974 (42 U.S.C. 5131), and other statutory functions, the Director of FEMA is charged with the responsibility to develop and implement plans and programs of disaster preparedness.

(c) There are two sections in the NRC's fiscal year 1982/1983 Appropriation Authorization (Pub. L. 97-415) that pertain to the scope of this rule. (1) Section 5 provides for the issuance of an operating license for a commercial nuclear power plant by the NRC if it is determined that there exists a State, local or utility plan which provides assurance that public health and safety is not endangered by the operation of the facility. This section would allow the NRC to issue an operating license for such plants without FEMA-approved State and local government plans. (2) Section 11 provides for the issuance of temporary licenses for operating a utilization facility at a specific power level to be determined by the Commission, pending final action by the Commission on the application. Also, this section authorizes the NRC to issue temporary operating licenses for these facilities without the completion of the required (NRC) Commission hearing process. A petition for such a temporary license may not be filed until certain actions are completed including the submission of a State, local or utility emergency response plan for the fcaility.

(d) To carry out these responsibilities, FEMA is engaged in a cooperative effort with State

and local governments and other Federal agencies in the development of State and local plans and preparedness to cope with the offsite effects resulting from radiological emergencies at commercial nuclear power facilities. FEMA is currently developing the Federal Radiological Emergency Response Plan (FRERP), which will provide the overall support to State and local governments, for all types of radiological incidents including those occuring at nuclear power plants. The FRERP, when published (projected for December 1983), in the **Federal Register** as an interim rule will replace the National Radiological Emergency Preparedness/Response Plan for Commercial Nuclear Power Plant Accidents (Master Plan). The Master Plan was promulgated by FEMA on December 23, 1980 (45 FR 84910).

(e) FEMA has entered into a Memorandum of Understanding (MOU) with the NRC to which it will furnish assessments, findings and determinations as to whether State and local emergency plans and preparedness are adequate and continue to be capable of implementation (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualification and equipment adequacy). These findings and determinations will be used by NRC under its own rules in connection with its licensing and regulatory requirements and FEMA will support its findings in the NRC licensing process and related court proceedings.

(f) Notwithstanding the procedures set forth in these rules for requesting and reaching a FEMA administrative approval of State and local plans, findings and determinations on the current status of emergency preparedness around particular sites may be requested by the NRC and provided by FEMA for use as needed in the NRC licensing process. These findings and determinations may be based upon plans currently available to FEMA or furnished to FEMA by the NRC through the NRC/FEMA Steering Committee.

(g) An envorinmental assessment has been prepared on which FEMA has determined that this riule will not have a significant impact on the quality if the human environment.

Updated: June 10, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

Final Rule

September 14, 1993

The Federal Emergency Management Agency (FEMA) and the U.S. Nuclear Regulatory Commission (NRC) have entered into a new Memorandum of Understanding (MOU) Relating to Radiological Emergency Response Planning and Preparedness. This superceded a memorandum entered into on November 1, 1980 (published December 16, 1980, 45 FR 82713), revised April 9, 1985 (published April 18, 1985, 50 FR 15485), and published as Appendix A to 44 CFR 353. The substantive changes in the new MOU are: (1) Self-initiated review by the NRC; (2) Early Site Permit process; (3) adoption of FEMA exercise time-frames; (4) incorporation of FEMA definition of exercise deficiency; (5) NRC committmetn to work with licensees in support of State and local governments to correct exercise deficiencies; (6) correlation of FEMA actions on withdrawal of approvals under 44 CFR part 350 and NRC enforcement actions; (7) disaster-initiated reviews in situations that affect offsite emergency infrastructures. The text of the MOU follows.

Memorandum of Understanding Between NRC and FEMA Relating to Radiological Emergency Planning and Preparedness

Updated: June 12, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

I. Background and Purposes

This Memorandum of Understanding (MOU) establishes a framework of cooperation between the Federal Emergency Management Agency (FEMA) and the U.S. Nuclear Regulatory Commission (NRC) in radiological emergency response planning matters so that their mutual efforts will be directed toward a more effective plans and related preparedness measures at and in the vicinity of nuclear reactors and feul cycle facilities which are subject to 10 CFR part 50, appendix E, and certain other fuel cycle and materials licensees which have potential for significant accidental offsite radiological releases. The memorandum is responsive to the President's decision of December 7, 1979, that FEMA will take the lead in offsite planning and response, his request that NRC assist FEMA in carrying out this role, and the NRC's continuing statutory responsibility for the radiological health and safety of the public.

On January 14, 1980, the two agencies entered into a "Memorandum of Understanding Between NRC and FEMA to Accomplish a Prompt Improvement in Radiological Emergency Preparedness," that was responsive to the President's December 7, 1979, statement. A revised and updated Memorandum of Understanding became effective November 1, 1980. The MOU was further revised and updated on April 9, 1985. This MOU is a further revision, to reflect the evolving relationship between NRC and FEMA and the experience gained in carrying out the provisions of the previous MOU's. This MOU superceded these two earlier versions of the MOU.

The general principals agreed to in the previous MOUs and reaffrimed in this MOU, are as follows: FEMA coordinates all Federal planning for offsite impact of radiological emergencies adn takes the lead for assessing offsite radiological emergency response plans* and preparedness, makes findings and determinations as to the adequacy and capability of implementing offsite plans, and communicates those findings and determinations to the NRC. The NRC reviews those FEMA findings and determinations in conjunction with the NRC onsite findings for the purpose of making determinations on the overall state of emergency preparedness. These overall findings and determinations are used by the NRC to make radiological health and safety decisions in the issuance of licenses and the continued operation of licensed plants to include taking enforcement actions as notices of violations, civil penalties, orders, or shutdown of operating reactors. This delineation of responsibilities avoids duplicative efforts by the NRC staff in offsite preparedness matters. However, if FEMA informs the NRC that an emergency, unforseen contingency, or other reason would prevent FEMA from providing a requested finding in reasonable time, then, inconsultation with FEMA, the NRC might initiate its own review of offsite emergency preparedness.

A separate MOU dated October 22, 1980, deals with NRC/FEMA cooperation and responsibilities in response to an actual or potential radiological emergency. Operations Response Procedures have been developed that implement the provisions of the Incident Response MOU. These documents are intended to be consistent with the Federal Radiological Emergency Response Plan, which describes the relationships, roles, and responsibilities of Federal Agencies for responding to accidents involving peacetime nuclear emergencies. On December 1, 1991, the NRC and FEMA also concluded a separate MOU in support of Executive Order 12657 (FEMA Assistance in Emergency Preparedness Planning at Commercial Nuclear Power Plants).

** Assessments of offsite plans may be based on State and local government plans submitted to FEMA under its rule (44 CFR Part 350), and as noted in 44 CFR 350.3(f), may also be based on plans currently availabelto FEMA or furnished to FEMA through the NRC/FEMA Steering Committee.*

Updated: June 12, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

IV. NRC/FEMA Steering Committee

The NRC/FEMA Steering Committee on Emergency Preparedness will continue to be the focal point for coordination of emergency planning and preparedness. As discussed in Section I of this agreement, response activities between these two agencies are addressed in a separate MOU. The Steering Committee will consist of an equal number of members to represent each agency with one vote per agency. When the Steering Committee cannot agree on the resolution of an issue, the issue will be referred to NRC and FEMA management. The NRC members will have lead responsibility for licensee planning and preparedness and the FEMA members will have lead responsibility for offsite planning and preparedness. The Steering Committee will assure coordination of plans and preparedness evaluation activities and revise, as necessary, acceptance criteria for licensee, State and local radiological emergency planning and preparedness. NRC adn FEMA will then consider adn adopt criteria, as appropriate, in their respective jurisdictions. (See attachment 1).

Updated: June 12, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

Attachment 1 -- FEMA/NRC Steering Committee

Purpose

Assure coordination of efforts to maintain and improve emergency planning and preparedness for nuclear power reactors as described in the NRC and FEMA rules and the NRC/FEMA MOU on Radiological Emergecny Planning and Preparedness. Coordinate consistent criteria for licensee, State and local emergency plans and preparedness.

Membership

The NRC and FEMA consignees of this MOU will designate respective co-chairs for the Steering Committee. The designated co-chairs will, in turn, appoint their respective members to the Committee.

Membership Changes

Changes to the membership of the NRC/FEMA Steering Committee may be made by the co-chairs representing the agency whose member is being changed.

Operating Procedures

The Steering Committee will maintain a record of each meeting to include identification of issues discussed and conslusions reached. No

meeting will be held without the attendance and participation of at least the co-chairs or two assigned members of each agency.

Coordination

When items involving responsibilities of other NRC or FEMA offices are discussed, the affected offices will be contated as appropriate.

Dated: September 7, 1993.
James L. Witt,
Director.

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Billing Code 8718-01-P

Updated: June 12, 1997

FOOTER: FEDERAL EMERGENCY MANAGEMENT AGENCY

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

II. Authorities and Responsibilities

FEMA-Executive Order 12148 charges the Director, FEMA, with the responsibility to "...establish Federal policies for, and coordinate, all civil defense and civil emergency planning, management, mitigation, and assistance functions of Executive agencies" (Section 2-101) and "...represent the President in working with State and local governments and the private sector to stimulate vigorous participation in civil emergency preparedness, mitigation, response, and recovery programs" (Section 2-104).

On December 7, 1979, the Presindent, in response to the recommendations of the Kemeny Commission on the Accident at Three Mile Island, directed that FEMA assume lead responsibility for all offsite nuclear emergency planning and response.

Specifically, the FEMA responsibilities with respect to radiological emergency preparedness as they relate to NRC are:
1. To take the lead in offsite emergency planning and to review and assess offsite emergency plans and preparedness for adequacy.
2. To make findings nad determinations as to whether offsite emergency plans are adequate and can be implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment). Notwithstanding the procedures which are set forth in 44 CFR part 350 for requesting and reaching a FEMA administrative approval of State and local plans, findings, and determinations on the curent status of emergency

planning and preparedness around particular sites, referred to as interim findings, will be provided by FEMA for use as needed in the NRC licensing process. Such findings will be provided by FEMA on mutually agreed to schedules or on specific NRC request. The request and findings will normally be written communications between the co-chairs of the NRC/FEMA Steering Committee. An interim finding provided under this arrangement will be an extension of FEMA's procedures for review and approval of offsite radiological emergency plans and preparedness set forth in 44 CFR part 350. It will be based on the review of currently available plans, and, if appropriate, joint exercise results related to a specific nuclear power plant site.

If the review involves an application under 10 CFR part 52 for an early site permit, the NRC will forward to FEMA pertinent information provided by the applicant and consult with FEMA as to whether there is any significant impediment to the development of offsite emergency plans. As appropriate, depending upon the nature of information provided by the applicant, the NRC will also request that FEMA determine whether major feature of offsite emergency plans submitted by the applicant are acceptable, or whether offsite emergency plans submitted by the applicant are adequate, as discussed below.

An interim finding based only on the review of currently available offsite plans will include an assessment as to whether these plans are adequate when measured against the standards and criteria of NUREG-0654/FEMA-REP-1, and, pending a demonstration through an exercise, whether there is reasonable assurance that the plans can be implemented. The finding will indicate one of the following conditions: (1) Plans are adequate and there is reasonable assurance that they can be implemented with only limited or no corrections needed; (2) plans are adequate, but before a determination can be made as to whether they can be implemented, corrections must be made to the plans or supporting measures must be demonstrated (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment) or (3) plans are inadequate and cannot be implemented until they are revised to correct deficiencies noted in the Federal review.

If, in FEMA's view, the plans that are available are not completed or are not ready for review, FEMA will provide NRC with a status report

delineating milestones for preparation of the plan by the offsite authorities as well as FEMA's actions to assist in timely development and review of the plans.

An interim finding on preparedness will be based on review of currently available plans and joint exercise results and will include an assessment as to (1) whether offsite emergency plans are adequate as measured against the standards and criteria of NUREG-0654/FEMA-REP-1 and (2) whether the exercise(s) demonstrated that there is reasonable assurance that the plans can be implemented.

An interim finding on preparedness will indicate one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in an exeercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision.
3. To assume responsibility, as a supplement to State, local, and utility efforts, for radiological emergency preparedness training of State and local officials.
4. To develop and issue an updated series of interagency assignments which delineate respective agency capabilities and responsibilities and define procedures for coordinations and direction for emergency planning and response. [Ciurrent assignments are in 44 CFR part 351, March 11, 1982. (47 FR 10758)]

NRC-The Atomic Energy Act of 1954, as amended, requires that the NRC grant licenses only if the health and safety of the public is adequately protected. While the tomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process. The NRC rules (10 CFR 50.33, 50.34, 50.47, 50.54, and appendix E to 10 CFR part 50, and 10 CFR part 52) include requirements for the licensee's emergency plans.

Specifically, the NRC responsibilities for radiological emergency preparedness are:
1. To assess licensee emergency plans for adequacy. This review will include organizations with whom licensees have written agreements to provide onsite support servies under emergency consitions.
2. To verify that licensee emergency plans are adequately

implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment).
3. To review the FEMA findings and determinstaions as to whether offsite plans are adequate and can be implemented.
4. To make radiological health and safety decisions with regard to the overall state of emergency preparedness (i.e., integration of emergency preparedness onsite as determined by the NRC) such as assurance for cintinued operation, for issuance of operating licenses, or for taking enforcement actions, such as notices of violations, civil penalties, orders, or shutdowns of operating reactors.

Updated: June 12, 1997

Planning Basis

NUREG-0654/FEMA-REP-1, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, dated October 1980, provides the basis for NRClicensees, State and local governments to develop radiological emergency plans and preparedness. This guidance is the product of the joint FEMA/NRC Steering Committee. This guidance is consistent with NRC and FEMA regulations and superceded other previous guidance and criteria published by FEMA and NRC on this subject. It will be used by reviewers in determining the adequacy of State, local and nuclear power plant licensees emergency plans and preparedness.

NUREG-0654/FEMA-REP-1, Revision 1, Section D, Planning Basis:

- 1. Background
- 2. Emergency Planning Zones
- 3. Time Factors Associated with Release
- 4. Radiological Characteristics of Releases

For a copy of NUREG-0654/FEMA-REP-1 in its entirety, see Publications.

44 CFR part 354, Appendix A, *Memorandum of Understanding (MOU) Between NRC and FEMA Relating to Radiological Emergency Planning and Preparedness*, establishes a framework of cooperation between FEMA and the NRC in radiological emergency response planning matters. The MOU is responsive to the President's December

7, 1979, decision that FEMA take the lead in offsite planning and response, his request that NRC assist FEMA in carrying out this role, and the NRC's continuing statutory responsibility for the radiological health and safety of the public. The NRC/FEMA Steering Committee is the focal point for coordination of emergency planning, prepredness, and response activities between the two agencies.

Planning Basis

1. Background

The NRC/EPATask Force Report on Emergency Planning, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, NUREG-0396, EPA 520/1-78-016" provides a planning basis for offsite emergency preparedness efforts considered necessary and prudent for large power reactor facilities. The NRC's policy statement of October 23, 1979 (44 FR 61123), directs the NRC staff to incorporate the guidance in the report into emergency preparedness documents. Additionally, the guidance in the NRC/EPA Task Force Report on Emergency Planning is now reflected in the NRC Final Rule on Emergency Planning. FEMA has also concluded that the guidance in NUREG-0396 should be used as the planning basis for emergency preparedness around nuclear power facilities. The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents that could produce offsite doses in excess of Protective Action Guides (PAGs).*/** No single specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Further, the range of possible selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood. The NRC/EPA Task Force did not attempt to define a single accident sequence or even a limited number of sequences. Rather, it identified the bounds of the parameters for which planning is recommended, based upon knowledge of the potential

consequences, timing, and release characteristics of a spectrum of accidents. Although the selected planning basis is independent of specific accident sequences, a number of accident descriptions were considered in the development of the guidance, including the core melt accident release categories of the Reactor Safety Study.

The most important guidance in the Report for planning officials is the definition of the area over which planning for predetermined actions should be carried out.

Information on the time frames of accidents is also important. The time between the initial recognition at the nuclear facility that a serious accident is in progress and the beginning of the radioactive release to the surrounding environment is critical in determining the type of protective actions which are feasible. Knowledge of the potential duration of release and the available before exposures are expected several miles offsite is important in determining what specific instructions can be given to the public.

A knowledge of kinds of radioactive materials potentially released is necessary to decide the characteristics of monitoring instrumentation, to develop tools for estimating few projected doses, and to identify the most important exposure pathways.

The need for specification of areas for the major exposure pathways is evident. The location of the population for whom protective measures may be needed, responsible authorities who would carry out protective actions and the means of communication to these authorities and to the population are all dependent on the characteristics of the planning areas. Emergency preparedness should be related to two predominant exposure pathways. They are:

a. Plume exposure pathway -- The principal exposure sources from this pathway are: (a) whole body external exposure to gamma radiation from the plume and from deposited material; and (b) inhalation exposure from the passing radioactive plume. The duration of the release leading to potential exposure could range from one-half hour to days. For the plume exposure pathway, shelter and/or evacuation would likely be the principal immediate protective actions to be recommended for the general public. When evacuation is

chosen as the preferred protective measure, initial evacuation of a 360ø area around the facility is desirable out to a distance of about two to five miles although initial efforts would, of course, be in the general downwind direction. This concept is indicated in Figure 1. The precise boundaries of such evacuations and sectors evacuated at extended downwind distances would be largely determined by political boundaries and would not fit the precise pattern of Figure 1. The possible administration of the thyroid blocking agent, potassium iodide, should also be considered.*** The U. S. Department of Health and Human Services(DHHS) is preparing guidance on the potassium iodide issue which will be considered by NRC and FEMA. The ability to best reduce potential exposure under the specific conditions during the course of an accident should determine the appropriate response.

b. Ingestion exposure pathway -- The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The duration of potential exposure could range in length from hours to months. For the ingestion exposure pathway, the planning effort involves the identification of major exposure pathways from contaminated food and water and the associated control and interdiction points and methods. The ingestion pathway exposures in general would represent a longer term problem, although some early protective actions to minimize subsequent contamination of milk or other supplies should be initiated (e.g., remove cows from pasture and put them on stored feed).

Separate guidance is provided for these two exposure pathways, although emergency plans for a particular site will include elements common to assessing or taking protective actions for both pathways.

** Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-520/1-75-001, September 1975, U. S. Environmental Protection Agency.*

*** Accidental Radioactive Contamination of Human Food and Animal Feeds, U. S. Department of Health, Education and Welfare (now U. S. Department of Health and Human Services), 43 FR 58790 of December 15,*

1978.

**** Potassium Iodide as a Thyroid-Blocking Agent in a Radiation Emergency, U. S. Department of Health, Education and Welfare (now U. S. Department of Health and Human Services), 43 FR 58798 of December 15, 1978.*

Updated: June 11, 1997

Planning Basis

2. Emergency Planning Zones

With regard to the area over which planning efforts should be carried out, "Emergency Planning Zones" (EPZs) about each nuclear facility must be defined both for the short term "plume exposure pathway" and for the longer term "ingestion exposure pathways." The Emergency Planning Zone concept is illustrated in Figure 1. EPZs are defined as the areas for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The criteria in NUREG 0396 are to be applied by the response organizations in these zones as applicable. The NRC/EPATask Force Report on Emergency Planning (NUREG 0396, EPA 520/1-78-016) anticipates that State, rather than local, response organizations will be principally responsible for the planning associated with the ingestion exposure pathway.

The choice of the size of the Emergency Planning Zones represents a judgment on the extent of detailed planning which must be performed to assure an adequate response base. In a particular emergency, protective actions might well be restricted to a small part of the planning zones. On the other hand, for the worst possible accidents, protective actions would need to be taken outside the planning zones.

The Task Force selected a radius of about 10 miles for the plume exposure pathway and a radius of about 50 miles for the ingestion exposure pathway, as shown in Figure 1 and in Table 1.* Although the radius for the EPZ implies a circular area, the actual shape would depend upon the characteristics of a particular site.

The size (about 10 miles radius) of the plume exposure EPZ was based primarily on the following considerations:

a. projected doses from the traditional design basis accidents would not exceed Protective Action Guide levels outside the zone;

b. projected doses from most core melt sequences would not exceed Protective Action Guide levels outside the zone;

c. for the worst core melt sequences, immediate life threatening doses would generally not occur outside the zone;

d. detailed planning within 10 miles would provide a substantial base for expansion of response efforts in the event that this proved necessary.

The NRC/EPA Task Force concluded that it would be unlikely that many protective actions for the plume exposure pathway would be required beyond the plume exposure EPZ. Also, the plume exposure EPZ is of sufficient size for actions within this zone to provide for substantial reduction in early severe health effects (injuries or deaths) in the event of a worst case core melt accident.

The size of the ingestion exposure EPZ (about 50 miles in radius, which also includes the 10-mile radius plume exposure EPZ) was selected because:

a. the downwind range within which contamination will generally not exceed the Protective Action Guides is limited to about 50 miles from a power plant because of wind shifts during the release and travel periods;

b. there may be conversion of atmospheric iodine (i.e., iodine suspended in the atmosphere for long time periods) to chemical forms which do not readily enter the ingestion pathway;

c. much of any particulate material in a radioactive plume would have been deposited on the ground within about 50 miles from the facility; and

d. the likelihood of exceeding ingestion pathway protective action guide levels at 50 miles is comparable to the likelihood of exceeding plume exposure pathway protective action guide levels at 10 miles.

** These radii are applicable to light water nuclear power plants, rated at 250 MWt or greater. The FEMA/NRC Steering Committee has concluded that small water cooled power reactors (less than 250 MWt) and the Fort St. Vrain gas cooled reactor may use a plume exposure emergency planning zone of about 5 miles in radius and an ingestion pathway emergency planning zone of about 30 miles in radius. In addition, the requirements for the alerting and notification system (Appendix 3) will be scaled on a case-by-case basis. This conclusion is based on the lower potential hazard from these facilities (-lower radionuclide inventory and longer times to release significant amounts of activity for many accident scenarios). The radionuclides considered in planning should be the same as recommended in NUREG-0396/EPA-520/1-78-016.*

Updated: June 11, 1997

Planning Basis

3. Time Factors Associated with Releases

The range of times between the onset of accident conditions and the start of a major release is of the order of one-half hour to several hours. The subsequent time period over which radioactive material may be expected to be released is of the order of one-half hour (short-term release) to a few days (continuous release). Table 2 summarizes the guidance on the time of the release, which has been used in developing the criteria for notification capabilities in Part II. (Other reasons for requiring prompt notification capabilities include faster moderate releases for which protective actions are desirable and the need for substantial lead times to carry out certain protective measures, such as evacuation, when this is indicated by plant conditions.)

4. Radiological Characteristics of Releases

Planners will need information on the characteristics of potential radioactivity releases in order to specify the characteristics of monitoring instrumentation, * develop decisional aids to estimate projected doses, and identify critical exposure modes.

For atmospheric releases from nuclear power facilities, three dominant exposure modes have been identified: (a) whole body (bone marrow) exposure from external gamma radiation and from ingestion of radioactive material; (b) thyroid exposure from inhalation or ingestion of radioiodines; and (c) exposure of other organs (e.g., lung) from inhalation or ingestion of radioactive materials. Any of these exposure modes could dominate (i.e., result in the largest exposures)

depending upon the relative quantities of various isotopes released.

Radioactive materials produced in the operation of nuclear reactors include fission products, transuranics and activation products generated by neutron exposure of the structural and other materials within and immediately around the reactor core. The fission products consist of a very large number of different kinds of isotopes (nuclides), almost all of which are initially radioactive. The amounts of these fission products and their potential for escape from their normal places of confinement represent the dominant potential for consequences to the public. Radioactive fission products exist in a variety of physical and chemical forms of varied volatility. Virtually all activation products and transuranics exist as non-volatile solids. The characteristics of these materials show quite clearly that the potential for releases to the environment decreases dramatically in this order: (a) gaseous materials; (b) volatile solids, and (c) non-volatile solids. For this reason, guidance for source terms representing hypothetical fission product activity within a nuclear power plant containment structure emphasizes the development of plans relating to the release of noble gases and/or volatiles such as iodine. Consideration of particulate materials, however should not be completely neglected. For example, capability to determine the presence or absence of key particulate radionuclides will be needed to identify requirements for additional resources. Table 3 provides a list of dominant radionuclides for each exposure pathway.

** An interagency Task Force on Emergency Instrumentation (offsite) is now preparing guidance on offsite radiation measurement systems, accident assessment techniques, and the type and quantity of instruments needed for the various exposure pathways. Federal agencies represented on the Instrumentation Task Force include FEMA, NRC, EPA, HEW, and DOE.*

Updated: June 13, 1997

Publications

The following REP documents are available for purchase from the U.S. Nuclear Regulatory Commission/Government Printing Office Sales Program (see address below):

- NUREG-0654/FEMA/REP-1, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, dated October 1980.

- NUREG-0654/FEMA-REP-1, Revision 1, Supplement 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants: Criteria for Utility Offsite Planning and Preparedness*, Final Report, dated August 1988.

- NUREG-0654/FEMA-REP-1, Revision 1, Supplement 2, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants: Criteria for Emergency Planning in an Early Site Permit Application*, Draft Report for Comment, dated March 1996.

- NUREG-0654/FEMA-REP-1, Revision 1, Supplement 3, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants: Criteria for Protective Action Recommendations for Severe Accidents*, Draft Report for Interim Use and Comment, dated July 1996.

To request copies of these documents, write to:

GPO Sales Program
Division of Technical Information and Document Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

FOOTER: FEDERAL EMERGENCY MANAGEMENT AGENCY

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

III. Areas of Cooperation

A. NRC licensing reviews

FEMA will provide support to the NRC for licensing reviews related to reactors, fuel facilities, and materials licenses with regard to the assessment of the adequacy of offsite radiological emergency response plans and preparedness. This will include timely submittal of an evaluation suitable for inclusion in NRC safety evaluation reports.

Substantially prior to the time that a FEMA evaluation is required with regard to fuel facility or materials license review, NRC will identify those fuel and materials licenses with potential for significant accidental offsite radiological releases and transmit a request for review to FEMA as the emergency plans are completed.

FEMA routine support will include providing assessments, findings and determinations (interin and final) on offsite plans and preparedness related to reactor license reviews. To support its findings and determinations, FEMA will make expert witnesses available before the Commission, the NRC Advisory Committe on Reactor Safeguards, NRC hearing boards and administrative law judges, for any court actions, and during any related discovery proceedings.

FEMA will appear in NRC licensing procedings as part of the presentation of the NRC staff. FEMA counsel will normally present FEMA witnesses and be permitted, at the discretion of the NRC

licensing board, to cross-examine the witnesses of parties, other than the NRC witnesses, on matters involving FEMA findings and determinations, policies, or operations; however, FEMA will not be asked to testify on status reports. FEMA is not a party to NRC proceedings and, therefore, is not subject to formal discovery requirements placed upon parties to NRC proceedings. Consistent with available resources, however, FEMA will respond informally to discovery requetss by parties. Specific assignment of professional responsibilities between NRC and FEMA counsel will be primarily the responsibility of the attorneys assigned to a particular case. In situations where questions of professional responsibility cannot be resolved by the attorneys assigned, resoluation of any differences will be made by the General Counsel of FEMA and the General Counsel of the NRC or their designees. NRC will request the presiding Board to place FEMA on the service list for all litigation in which it is expected to participate.

Nothing in this MOU shall be constucted in any way to diminish NRC's responsibility for protecting the radiological health and safety of the public.

B. FEMA Review of Offsite Plans and Preparedness

NRC will assist in the development adn review of offsite plans and preparedness through its membership on the Regional Assistance Committees (RAC). FEMA will chair the Regional Assistance Committees. Consistent with NRC's statutory responsibility, NRC will recognize FEMA as the interface with State and local governments for interpreting offsite radiological emergency planning and preparedness criteria as they affect those governments and for reporting to those governmetns the results of any evaluation of ther radiological emergency plans and preparedness.

Where questions arise concerning the interpretation of the criteria, such questions will continue to be referred to FEMA Headquarters, and when appropriate, to the NRC/FEMA Steering Committee to assure uniform interpretation.

C. Preparation for and Evaluation of Joint Exercises

FEMA and NRC will cooperate in determining exercise requirements for licenses, and State and local governments. They will also jointly observe and evaluate exercises. NRC and FEMA will institute procedures to enhance the review of objectives and scenarios for joint exercises. This review is to assure that both the onsite considerations of NRC and the offsite considerations of FEMA are adequately addressed and integrated in an manner that will provide for a technically sound exercise upon which an assessment of preparedness capabilities can be based. The NRC/FEMA procedures will provide for the availability of exercise objectives and scenarios sufficiently in advance of scheduled exercises to allow enough time for adequate review by NRC and FEMA and correction of any deficiencies by the licensee. The failure of a licensee to develop a scenario that adequately addresses both onsite and offsite considerations may result in NRC taking enforcement actions.

The FEMA reports will be a part of an interim finding on emergency preparedness; or will be the result of an exercise conducted pursuant to FEMA's review and approval procedures under 44 CFR part 350 and NRC's requirement under 10 CFR part 50, appendix E, Section IV.F. Exercise evaluations will deintify one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in the exercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision. The schedule for issuance of the draft and final exercise reports will be as shown in FEMA-REP-14 (Radiological Emergency preparedness Exercise manual).

The deficiency referred to in (2) above is defined as an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant. Because of the potential impact of deficiencies on emergency preparedness, they should be corrected within 120 days through appropriate remedial actions, including remedial exercises, drills, or other actions.

Where there are deficiencies of the types noted above, and when there

is a potential for remedial actions, FEMA Headquarters will prompty (1-2 days) discuss these with NRC Headquarters. Within 10 days of the exercise, officials notification of identified deficiencies will be made by FEMA to the State, NRC Headquarters, and the RAC with an information copy to the licensee. NRC will formally notify the licensee of the deficiencies and monitor the licensee's efforts to work with State and local authorities to correct the deficiencies. Approximately 60 days after official notification of the deficiency, the NRC, in consultation with FEMA, will assess the progress being made toward resoluation of the deficiencies.

D. Withdrawal of Reasonable Assurance Finding

If FEMA determines under 44 CFR 350.13 of its regulations that offsite emergency plans or preparedness are not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of radiological emergency to protect the health and safety of the public, FEMA shall, as described in its rule, withdraw approval.

Upon receiving notification of such action from FEMA, the NRC will promptly review FEMA's findings and determinations and formally document the NRC's position. When, as described, in 10 CFR 50.54(s)(2)(ii) and 50.54(s)(3) of its regulations, the NRC finds the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, the NRC will notify the affected licensee accordingly adn start the "120-day clock."*

E. Emergency Planning and Preparedness Guidance

NRC has lead responsibility for the development of emergency planning and preparedness guidance for licensees. FEMA has lead responsibility for the development of radiological emergency planning and preparedness guidance for State and local agencies. NRC and FEMA recognize the need for an integrated, coordinated approach to radiological emergency planning and preparedness by NRC licensees adn State and local governments. NRC and FEMA will each, therefore, provide opportunity for the other agency to review and comment on such guidance (inncluding interpretations of agreed joint guidance) prior to adoption as formal agency guidance.

F. Support for Document Management System

FEMA and NRC will each provide the other with continued access ot those automatic data processing support systems which contain relevant emergency preparedness data.

G. Ongoing NRC Research and Development Programs

Ongoing NRC and FEMA research and development programs that are related to State and local radiological emergency planning and preparedness will be coordinated. NRC and FEMA will each provide opportunity for the other agencu to review adn comment on relevant research and development programs prior to implementing them.

H. Public Information and Education Programs

FEMA will take the lead in developing public information and education programs. NRC will assist FEMA by reviewing for accuracy educational materials concerning radiation, and its hazards and information regarding appropriate actions to be taken by the general public in the event of an accident involving radioactive materials.

I. Recovery from Disasters Affecting Offsite Emergency Preparedness

Disasters that destroy roads, buildings, communications, transportation resources or other offsite infrastructure in the vicinity of a nuclear power plant can degrade the capabilities of offsite response organizations in the 10-mile plume emergency planning zone. Examples of events that could cause such devestation are hurricanes, tornadoes, eathquakes, tsunamis, volcanic eruptions, major fires, large explosions, and riots.

If a disaster damages the area around a licensed operating nuclear power plant to an extent that FEMA seriously questions the continued adequacy of offsite emergency preparedness, FEMA will inform the NRC promptly. Likewise, the NRC will inform FEMA promptly of any information it received from licensees, its inspectors, or others,

that raises serious questions about continued adequacy of offsite emergency preapredness. If FEMA concludes that a disaster-initiated review of offsite radiological emergency preparedness is necessary to determine if offsite emergency preparedness is still adequate, it will inform the NRC in writing, as soon as practible, including a schedule for conduct of the review. FEMA will also give the NRC (1) interim written reports of its findings, as appropriate, and (2) a final written report on the results of its review.

The disaster-initiated review is performed to reaffirm the radiological emergency preparedness capabilities of affected offsite jurisdictions located in the 10-mile emergency planning zone and is not intended to be a comprehensive reveiw of offsite plans and preparedness.

The NRC wil consider information provided by FEMA Headquarters and pertinent findings from FEMA's disaster-initiated review in making decisions regarding the restart or continued operation of an affected operating nuclear power reactor. The NRC will notify FEMA Headquarters, in writing, of the schedule for restart of an affected reactor and keep FEMA Headquarters informed of changes in that schedule.

** Per 10 CFR 50.54(s)(2)(ii), the Commission will determine whether the reactor shall be shut down or other appropriate enforcement actions if such conditions are not corrected within four months. The NRC is not limited by this provision of the rule, for, as stated in 10 CFR 50.54(s)(3), "Nothing in this paragraph shall be construed as limiting the authority of the Commission to take action under any other regulation or authority of the Commission* or at any time other than that specified in this paragraph" *(emphasis added).*

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations Part 350

350.13 Withdrawal of approval

(a) If, at any time after granting approval of a State plan, the Associate Director determined, on his or her own initiative, motion or on the basis of information another person supplied, that the State or local plan is no longer adequate to protect public health and safety by providing reasonable assurance that appropriate measures can be taken, or is no longer capable of being implemented, he or she shall immediately advise the Governor of the affected State, through the appropriate regional Director and the NRC of that initial determination in writing. FEMA shall spell out in detail the reasons for its initial determination, and shall describe the deficiencies in the plan of the State. If, after four months from the date of such an initial determination, the State in question has not either: (1) Corrected the deficiencies noted, or (2) submitted an acceptable plan for correcting those deficiencies, the Associate Director shall withdraw approval and shall immmediately inform the NRC and shall publish in the **Federal Register** and the local newspaper having the largest daily circulation in the affected State notice of its withdrawal of approval. The basis upon which the Associate Dirctor makes the determination for withdrawal of approval is the same basis used for reviewing plans and exercises, i.e., the planning standards and related criteria in NUREG-0654/FEMA-REP-1, Rev. 1.

(b) In the event that the State in question shall submit a plan for correcting the deficiencies, the Associate Director shall negotiate a schedule and a timetable under which the State shall correct the deficiencies. If, on the agreed upon date, the deficiencies have been corrected, the Associate Director shall withdraw the initial determination and the approval previously granted shall remain valid. He or she shall inform the Governor(s), the NRC, the pertinent Regional Director(s) and notify the public as stated in paragraph (a) of theis section. If, however, on the agreed upon date, the deficiencies are not corrected, FEMA shall withdraw its approval and shall communicate its decision to the Governor of the State whose plan is in question, the NRC, the appropriate Federal agencies and notify the public

as indicated above.

(c) Within 30 days after the date of notification of withdrawal of approval of a State or local plan, any interested person may appeal the decision of the Associate Director to the Director; however, such an appeal must be made soley on the ground that the Associate Director's decision, based on available record, was unsupported by substantial evidence. (See 350.15 for appeal procedures.)

Updated: July 7, 1998

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.15 Appeal procedures

(a) Any interested person may appeal a decision made under 350.12 and 350.13 of this Part, by submitting to the Director, FEMA, a written notice of appeal, within 30 days after the notice of appearance in the **Federal Register,** of the notice of decision relating to the matter being appealed. The appeal must be addressed to the Director, Federal Emergency Management Agency, 500 C Street, SW, Washington, D.C. 20472. The appeal letter shall state specific reasons for the appeal and include an offer to provide documentation supporting appellate arguments.

(b) Upon receipt of an appeal, the Director or the Director's designee shall review the file, as submitted to the Associate Director, State and Local Programs and Support, by the Regional Director of the FEMA Region concerned, based on the information contained in the file and appeal letter, with supporting documentation. The Director or the Director's designee shall decide whether or not the Associate Director's initial decision was supported by substantial evidence in the file and is consistent with FEMA policy.

(c) The decision of the Director or the Director's designee shall be published in the **Federal Register** as the final agency decision on the matter and shall not be reviewable wityhin FEMA, except upon a showing that it was procured by fraud or misrepresentation. In addition to publication in the **Federal Register,** copies of the decision shall be forwarded to the appellant, the Governor(s) of the State(s) affected, the NRC and the affected licensee of the involved power facility.

Dated: September 15, 1983
Louis O. Giuffrida,
Director

{FR Doc. 83-25981 Filed 9-27-83; 8:15 am}
Billing Code 6718-01-M

Updated: June 10, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

V. Working Arrangements

A. The normal point of contact for implementation of the points in this MOU will be the NRC/FEMA Steering Committee.

B. The Steering Committee will establish the day-to-day procedures for assuring that the arrangements of this MOU are carried out.

Updated: June 12, 1997

Appendix A of 44 CFR Part 354

Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission

VI. Memorandum of Understanding

A. This MOU shall be effective as of date of signature and shall continue in effect unless terminated by either party upon 30 days notice in writing.

B. Amendments or modifications to this MOU may be made upon written agreement by both parties.

Approved for the U.S. Nuclear Regulatory Commission.
Dated: June 17, 1993.
James M. Taylor,
Executive Director for Operations
Dated: June 17, 1993.

Approved for the Federal Emergency Management Agency.
Richard W. Krimm,
Acting Associate Director, State and
Local Programs and Support.

Updated: June 12, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.4 Exclusions

The regulation in this part does not apply to nor will FEMA apply any criteria with respect to, any evaluation, assessment or determination regarding the NRC licensee's emergency plans or preparedness, nor shall FEMA make any similar determinations with respect to the integration of offsite and NRC licensee emergency preparedness except as these assessments and determinations affect the emergency preparedness of State and local governments. The regulation in tis part applies only to State and local planning and preparedness with respect to emergencies at commercial nuclear power facilities and does not apply to other facilities which may be licensed by NRC, nor to United States Government-owned, non-licensed facilities nor the jurisdictions surounding them.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.5 Criteria for review and approval of State and local radiological emergency plans and preparedness

(a) Section 50.47 of NRC's Emergency Planning Rule [10 CFR Parts 50 (Appendix E) and 70 as amended] and the joint FEMA-NRC *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants* (NUREG-0654/FEMA-REP-1, Rev. 1, November 1908) which apply insofar as FEMA is concerned to State and local governments, are to be used in reviewing, evaluating and approving State and local radiological emergency plans and preparedness and in making any findings and determinationswith respect to the adequacy of the plans and the capabilities of State and local governments to implement them. Both the planning and preparedness standards and related criteria contained in NUREG-0654/FEMA-REP-1, Rev. 1 are to be used by FEMA and the NRC in reviewing and evaluating State and local government radiological emergency plans and preparedness. For brevity, only the planning standards contained in NUREG-0654/FEMA-REP-1, Rev. 1 are presented below.

(1) Primary responsibilities for emergency response by the nuclear facility licensee, and by State and local organizations within the Emergency Planning Zone have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established and each principal response organization has staff to respond to and augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to rpovide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities are specified. (This standard applies only to NRC licensees but is included here for completeness.)

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site

Emergency Operations Fcaility have been made and other organizations capable of augmenting the planned response have been identified.

(4) A standard emergency classification and action level scheme, the basis of which include facility system and effluent paramenters, is in use by the nuclear facility licensee, and State and local plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

(5) Procedures have been established for notification, by the licensee, of State and local response organizations and for the notification of emergency personnel by all response organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

(6)Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

(7) Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance and procedures for coordinated dissemination of information to the public are established.

(8) Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

(9) Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

(10) A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

(11) Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

(12) Arrangements are made for medical services for contaminated injured individuals.

(13) General plans for recovery and reentry are developed.

(14) Periodic exercises are (will be) conducted to develop and maintain key skills and deficiencies identified as a result of exercises or drills are (will be) corrected.

(15) Radiological emergency response training is provided to those who may be called upon to assist in an emergency.

(16) Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

(b) In order for State or local plans and preparedness to be approved, such plans and preparedness must be determined to adequately protect the public health and safety by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency.

Updated: June 10, 1997

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.6 Assistance in development of State and local plans

(a) An integrated approach to the development of offsite radiological emergency plans by States, localities and the licensees of the NRC with the assistance of the Federal Government is the approach most likely to provide the best protection to the public. Hence, Federal agencies, including FEMA Regional staff, will be made available upon request to assist States and localities in the development of plans.

(b) There now exists in each of the ten standard Federal Regions a Regional Assistance Committee (RAC) (formerly the Regional Advisory Committee) chaired by a FEMA Regional official and having members from the Nuclear Regulatory Commission, Department of Health and Human Services, Department of Energy, Department of Transportation, Environmental Protection Agency, the United States Department of Agriculture and Department of Commerce. Whereas in 44 CFR Part 351, the Department of Defense is listed as a potential member of the RACs, it is not listed in this rule because military nuclear facilities are not the subject of concern. The RACs will assist State and local government officials in the development of their radiological emergency response plans, and will review plans and observe exercises to evaluate the adequacy of these plans and related preparednesss. This assistance does not include the actual writing of State and local government plans by RAC members.

(c) In accomplishing the foregoing, the RACs will use the standards and criteria in NUREG-0654/FEMA-REP-1, Rev. 1, and will render such technical assistance as may be required, appropriate to their agency mission and expertise. In observing and evaluating exercises, the RACs will identify, soon afer an exercise, any deficiencies observed in the planning and preparedness effort including deficiencies in resources, training of staff, equipment, staffing levels and deficiencies in the qualifications of personnel.

Updated: July 7, 1998

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.7 Application by State for review and approval

(a) A State which sekks formal review and approval by FEMA of the State's radiological emergency plan shall submit an application for such review and approval to the FEMA Regional Director of the Region in which the State is located. The application, in the form of a letter from the State Governor or from such other State official as the Governor may designate, shall contain one copy of the completed State plan, including coverage of response in the ingestion exposure pathway EPZ. The application will also include plans of all appropriate local governments. The application shall specify the site or sites for which plan approval is sought. For guidance on the local governments plans that should be included with an application, refer to Part I.E. NUREG-0654/FEMA-REP-1, Rev. 1, entitled Contiguous Jurisdiction Governmental Emergency Planning (see (e)). Only a State may request formal review of State or local radiological emergency plans.

(b) Generally, the plume exposure pathway EPZ for nuclear power facilities shall consist of an area about 10 miles (16 Km) in radius and the ingestion exposure pathway EPZ shall consist of about 50 miles (80 Km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power facility shall be determined by State and local governments in consultation with FEMA and NRC taking into account such local conditions as demography, topography, land characteristics, access routes and local jurisdiction boundaries. The size of EPZs may be determined by NRC in consultation with FEMA on a case-by-case basis for gas cooled reactors and for reactors with an authorized power level less than 250 Mw thermal. The plans for the ingestion exposure pathway shall focus on such actions as are appropriate to protect the public from ingesting contaminated food and water.

(c) A State may submit separately its plans for the EPZs and the local government plans

related tp individual nuclear power facilities. The purpose of separate submissions is to allow approval of a State plan, and of plans necessary for specific nuclear power facilities in a multiple-facility State, while not approving or acting on the plans necessary for other nuclear power facilities within the State. If separeate submissions are made, appropriate adjustments in the State plan may be necessary. In any event, FEMA approval of State and appropriate local government plans shall be site specific.

(d) The applications shall contain a statement that the State plan, together with the appropriate local plans, is, in the opinion of the State, adequate to protect the public helath and safety of its citizens living within the emergency planning zones for the nuclear power facilities included in the submission by providing reasonable assurance that State and local government can and intend to effect appropriate protective measures offsite in the event of a radiological emergency.

(e) FEMA and the States will make suitable arrangements in the case of overlapping or adjacent jurisdictions to permit an orderly assessment and approval of interstate or interregional plans.

Updated: July 7, 1998

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.8 Initial FEMA action on State plan

(a) The Regional Director shall acknowledge in writing within ten days the receipt of the State application.

(b) FEMA shall publish a notice signed by the Regional Director or designee in the **Federal Register** within 30 days after receipt of the application, that an application from a State has been received and that copies are available at the Regional Office of review and copying in accordance with 44 CFR 5.26.

(c) The Regional Director shall furnish copies of the plan to members of the RAC for their analysis and evaluation.

(d) The Regional Director shall make a detailed review of the State plan, including those of local governments, and assess the capability of State and local governemnts to effectively implement the plan (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualification and equipment adequacy). Evaluation and commetns of the RAC members will be used as part of the review process.

(e) In connection with the review, the Regional Director may make suggestions to States concerning perceived gaps or deficiencies in the plans, and the State may amend the plan at any time prior to forwarding to the Associate Director of FEMA.

(f) Two conditions for FEMA approval of State plans (including local government plans) are the requirements for an exercise (see 350.9), and for public participation (see 350.9 and 350.10). These activities occur during the Regional review and prior to the forwarding of the plan to the Associate Director.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations

Part 350

350.9 Exercises

(a) Before a Regional Director can forward a State plan to the Associate Director for approval, the State, together with all appropriate local governments, must conduct a joint exercise of the State plan, involving full participation* of appropriate local government entities, the State and the appropriate licensee of the NRC. To the extent achievable, this exercise shall include participation byappropriate Federal agencies. This exercise shall be observed and evaluated by FEMA and by representatives of other Federal agencies with membership on the RACs and by NRC with respect to licensee response. Within 48 hours of the completion of the exercise, a briefing involving the exercise participants and Federal observers shall be conducted by the Regional Director to discuss the preliminary results of the exercise. If the exercise discloses any deficiencies in the State and local plans, or the ability of the State and local governments to implement the plans, the FEMA representatives shall make them known promptly in writing to appropriate State officials. To the extent necessary, the State shall amend the plan to incorporate recommended changes or improvements or take other corrective measures, such as remedial exercises*, to demonstrate to the Regional Director that identified weaknesses have been corrected.

(b) The Regional Director shall be the FEMA official responsible for certifying to the Associate Director that an exercise of the State plan has been conducted, and that changes and corrective measures in accordance with 350.9(a) above have been made.

(c) State and local governments that have fully participated in a joint exercise within one year prior to the effective date of this final rule will have continuing approval of their radiological emergency plans and preparedness by following the frequency indicated in paragraph (c)(1)-(4) of this section. State and local governments that have not fully participated in a joint exercise within one year of the effective date of this rule will follow the frequency indicated in paragraph (c)(1)-(4) of this section after completion of a joint exercise in which they have fully participated. If, in developing exercise schedules with State and local governments to implement the requirements in paragraph (c)(1)-(4) of this section, the Regional Director finds that unusual hardships would result, he may seek relief

from the Associate Director.

(1) Each State which has a commercial nuclear power site within its boundaries or is within the 10-mile plume exposure pathway Emergency Planning Zone of such site shall fully participate in an exercise jointly with the nuclear power plant licensee and appropriate local governments at least every two years.

(2) Each State with multiple sites within its boundaries shall fully participate in a joint exercise at least every 2 years. When not fully participating in an exercise at a site, the State shall partially participate** at that site to support the full participation of appropriate local governments. Priority shall be given to new facilities seeking an operating license from the NRC and which have not fully participated in a joint exercise involving the State, local governments and the licensee at that site. State and local governments will coordinate the scheduling of these exercises with the appripriate FEMA and NRC Regional Offices and the affected licensees.

(3) Each appropriate local government which has a site within its boundaries or is within the 10-mile emergency planning zone shall fully participate in a joint exercise with the licensee and the State at least every two years. For those local governments that have planning and preparedness responsibilities for more than one facility, the Regional Director may seek an exemption from this requirement by recommending alternative arrangements for approval by the Associate Director.

(4) States within the 50-mile emergency planning zone of a site shall exercise their plans and preparedness related to ingestion exposure pathway measures at least once every five years in conjunction with a plume exposure pathway exercise for that site.

(5) Remedial exercises may be required to correct deficiencies observed in exercises conducted for continued FEMA approval. Should this occur, the FEMA Regional Director will determine the participation required from the States and/or local governments.

(d) Within 48 hours of the completion of an exercise conducted for continued FEMA approval, a briefing involving the exercise participants and Federal observers shall be conducted by the Regional Director to discuss the preliminary results of the exercise. If the exercise discloses any deficiencies in the State and local plans, or the ability of the State and local governments to implement the plans, the FEMA representatives shall make them known promptly in writing to appropriate State officials. To the extent necessary, the State shall amend the plan to incorporate recommended changes or improvements or take other corrective measures, such as remedial exercises, to demonstrate to the Regional Director that identified weaknesses have been corrected. The Regional Director shall forward his or her evaluation of the exercise conducted for continued FEMA approval to the Associate Director including the certification that changes and corrective measures have been made.

(e) Following the exercise conducted for continued FEMA approval, the Regional Director shall conduct a meeting in the vicinity of the nuclear power facility which will include the exercise participants, representatives from the NRC and other appropriate Federal agencies and the public and media as observers. The purpose of this meeting is to discuss the evaluation of the exercise. At the discretion of the Regional Director, written comments from the public nad media may be submitted at or after the meeting. These comments will be taken into consideration by the Regional Director in his or her evaluation.

(f) After FEMA approval of a State and local plan has been granted, failure to exercise the State and local plans at the frequency and participation described in this section still be grounds for withdrawing FEMA approval. (See 350.13.)

** See 350.2 for definitions of full participation and remedial exercises.*

*** See 350.2 for definition of partial exercise.*

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FEMA Rule 44 of the Code of Federal Regulations Part 350

350.10 Public meeting in adavance of FEMA approval

During the FEMA Regional Office review of a State plan and prior to the submission by the Regional Director of the evaluation of the plan and exercise to the Associate Director, the FEMA Regional Director shall ensure that there is at least one public meeting conducted in the vicinity of the nuclear power facility. The purpose of such a meeting, which may be conducted by the State or by the Regional Director, shall be to: (1) Acquaint the members of the public in the vicinity of each facility with the content of the State and related local plans, and with the conduct of the joint exercise which tested the plans; (2) answer any questions about FEMA review of the plan and the exercise; (3) receive suggestions from the public concerning imporvements or changes that may be necessary; and (4) describe to the public the way in which the plan is expected to function in the event of an actual energency. The Regional Director should assure that representatives from appropriate State and local government agencies, and the affected utility appear at such meetings to make presentations and to answer questions from the public. The public meeting should be held after the first joint (utility, State and local governments) exercise at a time mutually agreed to be State and local authorities, licensees and FEMA and NRC Regional officials. This meeting shall be noticed in the local newspaper with the largest circulation in the area or other such media as the Regional Director may select, on at least two occassions, one of which is at least two weeks before the meeting takes place and the other is within a few days of the meeting date. Local radio and television stations should be notified of the scheduled meeting at least one week in advance. Representatives from NRC and other appropriate Federal agencies should alsobe invited to participate in these meetings. If, in the judgement of the FEMA Regional Director, the public meeting or meetings reveal deficiencies in the State plan and/or the joint exercise, the Regional Director shall inform the State of the fact together with recommendations for improvement. No FEMA approval of State and local plans and preparedness shall be made until a meeting descrobed in this paragraph shall have been held at or near the nuclear power facility site for which the State is seeking approval.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 350

350.11 Action by FEMA Regional Director

(a) Upon completion of his or her review, including conduct of the exercise required by 350.9 and after the public meeting required by 350.10, the Regional Director shall prepare an evaluation of the State plan, including plans for local governments. Such evaluation shall be specific with respect to the plans available to each nuclear facility so that findings can be made by the Associate Director on a site-specific basis.

(b) The Regional Director shall evaluate the adequacy of State and local plans and preparedness on the basis of the criteria set forth in 350.5, and shall report the evaluation with respect to each of the planning standards mentioned therein as such apply to State and local plans and prepareness.

(c) The Regional Director shall forward the State plan together with his or her evaluation and other relevant record material to the Associate Director. Relevant record material will include the results of the exercise (i.e., deficiencies noted and corrections made), a summary of the deficiencies identified during the oublic meeting, recommendations made to the State and commitments made by the State for effecting improvements in its plans and preparedness and actions taken by the State.

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 350

350.12 FEMA Headquarters review and approval

(a) Upon receipt from a Regional Director of a State plan, the Associate Director shall conduct such review of the State plan as he or she shall deem necessary. The Associate Director shall arrange for copies of the plan, together ith the Regional Director's evaluation, to be made available to the members of the Federal Radiological Preparedness Coordinating Committee (FRPCC) and to other offices of FEMA with appropriate guidance relative to any assistance that may be needed in the FEMA review and approval process.

(b) If, after formal submission of the State plan and the Regional Director's evaluation, the Associate Director determined that the State plan and preparedness:

(1) Are adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate measures can be taken offsite in an event of a radiological emergency; and

(2) Are capable of being implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications and equipment adequacy); the Associate Director shall approve in writing the State plan. The Associate Director shall concurrently communicate this FEMA approval to the Governor of the State(s) in question, the NRC and the pertinent Regional Director(s) and immediately shall publish in the **Federal Register** a notice of this effect.

(c) If, after formal submission of the State plan, the Associate Director is not satisfied with the adequacy of the plan or preparedness with respect to a particular site, he or she shall concurrently communicate that decision to the Governor(s) of the State(s), the NRC and pertinent Regional Director(s), together with a statement in writing explaining the reason for the decision and requesting appropriate plan or prepareness revision. Such a statement shall be transmitted to the Governor(s) through the appropriate Regional Director(s). The Associate Director shall immediately publish a notice to this effect in the **Federal**

Register.

(d) The approval shall be of the State plan together with the local plans for each nuclear power facility (including out-of-State facilities) for which approval has been requested. FEMA may withhold approval of plans applicable to a specific nuclear power facility in a multi-facility State, but nevertheless approve the State plan and associated local plans applicable to other facilities in a State. Approval may be withheld for a specific site until plans for all jurisdictions within the emergency planning zone of that site have been reviewed and found adequate.

(e) Within 30 days after the date of notification of approval for a particular nuclear power facility or within 30 days of any statement of disapproval of a State plan, any interested person may appeal the decision of the Associate director to the Director; however, such an appeal must be made solely upon the ground that the Associate Director's decision, based on the available record, was unsupported by substantial evidence. (See 350.15 for appeal procedures.)

Updated: June 10, 1997

FEMA Rule 44 of the Code of Federal Regulations Part 350

350.14 Amendments to State plans

(a) The State may amend a plan submitted to FEMA for review and approval under 350.7 at any time during the review process or may amend a plan at any time after FEMA approval has been granted under 350.12. A State must amend its plan in order to extend the coverage of the plan to any new nuclear power facility which becomed operational after a FEMA approval or in case of any other significant change. A State plan shall remain in effectas approval while any significant change is under review.

(b) A significant change is one which involves the evaluation and assessment of a planning standard or which involves a matter which, if presented with the plan, would need to have been considered by the Associate Director inmaking a decision that State or local plans and preparedness are: (1) Adequate to protect the health and safety of the public in the vicinity of the nuclear power facility by providing reasnable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) capable of being implemented.

(c) A Significant change will be processed in the same manner as if it were an initial plan submission. However, the Regional Director may determine that certain procedures, such as holding a public meeting or a complete exercise, would be unnecessary. The existing FEMA approval shall remain in effect while any significant changes are under review.

(d) Changes, such as a change in a telephone number, that are not significant as defined in paragraphs (b) and (c) of this section, but are necessary to maintain currency of the plan, should be forwarded to the Regional Director.

Updated: June 10, 1997

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart C -- Interagency Assignments

351.21 The Nuclear Regulatory Commission

(a) Assess NRC nuclear facility (e.g., commercial power plants, fuel processing centers and research reactors) licensee emergency plans for adequacy to rpotect the health and safety of the public.

(b) Verify that nuclear facility licensee emergency plans can be adequately implemented (e.g., adequacy and maintenance of equipment, procedures, training, resources, staffing levels and qualifications).

(c) Review FEMA's findings and determinations of State and local radiological emergency plans for areas surrounding NRC licensed nuclear facilities.

(d) Take into account the overall state of emergency preparedness in making decisions to issue operating licenses or shut down licensed operating reactors, including the integration of assessments of emergency preparedness onsite by NRC and offsite by FEMA.

(e) Where not already established, determine, in cooperation with other Federal agencies, the appropriate planning bases for NRC licensed nuclear facilities including distances, times and radiological characteristics.

(f) Assist FEMA in developing and promulgating guidance to State and local governments for the preparation of radiological emergency plans.

(g) Participate with FEMA in assisting State and local governments in developing their

radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(h) Assist FEMA and DOT in the preparation and promulgation of guidance to State and local governments for their use in developing the transportation portions of radiological emregency plans.

(i) Provide representation to and support for the FRPCC and the RACs.

(j) Assist FEMA in the development, implementation and maintenance of public information and education programs.

(k) Assist FEMA with other Federal agencies in the development of representative scenarios from which nuclear facility operators and State and local governments may select for use in testing and exercising radiological emergency plans.

(l) Assist FEMA in the development of guidance for State and local governments on emergency instrumentation systems for radiation detection and measurement.

(m) Assist FEMA with the development, implementation and presentation to the extent that resources permit of training programs for Federal, State and local radiological emergency preparedness personnel.

(n) Assist FEMA in providing guidance and assistance to State and local governments concerning the storage and distribution of radioprotective substances and prophylactic use of drugs (e.g., potassium iodide) to reduce the radiation dose to specific organs as a result of radiological emergencies.

Updated: July 7, 1998

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations

Part 351

Subpart C -- Interagency Assignments

351.22 The Environmental Protection Agency

(a) Establish Protective Action Guides (PAGs) for all aspects of radiological emergency planning in coordination with appropriate Federal agencies.

(b) Prepare guidance for State and local governments on implementing PAGS, including recommendations on protective actions which can be taken to mitigate the potential radiation dose to the population. This guidance will be presented in the Environmental Protection Agency (EPA) "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." (The preparation of PAGs related to human food and animal feed will be done in coordination with the Department of Health and Human Services (HHS)/Food and drug Administration.)

(c) Assist FEMA in developing and promulgating guidance to the State and local governments for the preparation of radiological emergency plans.

(d) Assist FEMA with the development, implementation and presentation to the extent that resources permit of technical training for State and local officials regarding PAGs and protective actions, radiation dose assessment and decisionmaking.

(e) Participate with FEMA in assisting State and local governments in developing their radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(f) Assist FEMA in the development of guidance for State and local governments on emergency instrumentation systems for radiation detection and measurement.

(g) Provide representation to and support for the FRPCC and the RACs.

(h) Assist FEMA in developing representative scenarios from which nuclear facility operators and State and local governments may select for use in testing and exercising radiological emeregncy plans.

(i) Assist FEMA in the development, implementation and maintenance of public information and education programs.

Updated: July 7, 1998

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations

Part 351

Subpart C -- Interagency Assignments

351.23 The Department of Health and Human Servcies

(a) Develop and specify protective actions and associated guidance to State and local governments for human food and animal feed (in cooperation with the Environmental Protection Agency).

(b) Provide guidance and assistance to State and local governments in preparing programs related to mental health, behavioral disturbances and epidemiology associated with radiological emergencies.

(c) Assist FEMA in the development, implementation and maintenance of public information and education programs to support State and local government radiological emergency plans and preparedness.

(d) Assist FEMA with the development, implementation and presentation to the extent that resources permit of a radiological emergency training program to support State and local government personnel in accident assessment, protective actions and decisionmaking.

(e) Develop and assist in providing the requisite training programs for State and local health, mental helath and social service agencies.

(f) Provide guidance to State and local governments on the use of radioprotective substances and prophylactic use of drugs (e.g., potassium iodide) to reduce the radiation dose to specifi organs including dosage and projected radiation exposures at which such

drugs should be used.

(g) Assist FEMA in developing and promulgating guidance to State and local governments for the preparation of radiological emergency plans.

(h) Participate with FEMA in assisting State and local governments in developing their radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(i) Provide representation to and support for the FRPCC and the RACs.

(j) Assist FEMA in developing representative scenarios from which nuclear facility operators and State and local governments may select for use in testing and exercising radiological emeregncy plans.

(k) Assist FEMA in the development of guidance for State and local governments on emergency instrumentation systems for radiation detection and measurement.

(l) Assist, in cooperation with the United States Department of Agriculture (USDA), the State and lcoal governments in the planning for the safe production, during radiological emergencies, of human food and animal feed in the emergency planning zones around fixed nuclear facilities.

(m) Assist FEMA, through the Interagency Radiation Research Committee, chaired by the Department of Health and Human Services, in the coordination of Federal research efforts, primarily in areas related to the bioeffects of radiation, applicable to State and local plans and preparedness.

Updated: July 7, 1998

PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart C -- Interagency Assignments

351.24 The Department of Energy

(a) Determine the apprpriate planning bases for the Department of Energy (DOE) owned and contractor operated nuclear facilities (e.g., research and weapon production facilities) including distances, time and radiolgical characteristics.

(b) Assess DOE nuclear facility emergency plans for adequacy in contributing to the health and safety of the public.

(c) Verify that DOE nuclear facility emergency plans can be adequately implemented (e.g., adequacy and maintenance of equipment, procedures, training, resources, staffing levels and qualification).

(d) Assist State and local governments, within the constraints of national security and in coordination with FEMA, in the preparation of those portions of their radiological emergency plans related to DOE owned and contractor operated nuclear facilities and radioactive materials in transit.

(e) Review and assess FEMA's findings and determinations on the adequacy of and capability to implement State and local radiological emergency plans for areas surrounding DOE nuclear facilities. Make independent assessments of te overall state of plans and preparedness.

(f) Serve as the lead agency for coordinating the development and issuance of interagency instructions and guidance to implement the Federal Radiological Monitoring and Assessment Plan (FRMAP), which will replace the Interagency Radiological Assistance

Plan . The FRMAP provides the framework through which participating federal agencies will coordinate their emergency radiological monitoring and assessment activities with those of State and local governments.

(g) Develop, maintain and improve capability to detect and assess hazardous levels of radiation.

(h) Assist FEMA in developing and promulgating guidance to State and local governments for the preparation of radiological emergency plans.

(i) Assist FEMA with the development, implementation and presentation to the extent that resources permit of training programs for Federal, State and local radiological emergency response personnel.

(j) Participate with FEMA in assisting State and local governments in developing their radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(k) Develop, with FEMA, representative scenarios from which DOE facilty operators and State and local governments may select for use in testing and exercising radiological emergency plans.

(l) Provide representation to and support for the FRPCC and the RACs.

(m) Assist FEMA in the development of guidance for State and local governments on emergency instrumentation systems for radiation detection and measurement.

Updated: July 7, 1998

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart C -- Interagency Assignments

351.25 The Department of Transportation

(a) Assist FEMA, along with NRC, in the preparation and promulgation of guidance to State and local governments for their use in developing the transportation portions of radiological emergency plans.

(b) Assist FEMA in its review and approval of State and local radiological emergency plans and in the evaluation of exercises to test such plans.

(c) Provide guidance and materials for use in training emergency services and other response personnel for transportation accidents involving radioactive materials and participate in interagency planning for such training.

(d) Provide representation to and support for the FRPCC and the RACs.

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FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart C -- Interagency Assignments

351.26 The United States Department of Agriculture

(a) Assist FEMA in developing and promulgating guidance to State and local governments for the preparation of radiological emergency plans.

(b) Participate with FEMA in assisting State and local governments in developing their radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(c) Assist State and local governments in preparing to implement protective actions in food ingestion pathway emergency planning zones around fixed nuclear facilities.

(d) Develop, in coordination with FEMA, the HHS and other Federal agencies, guidance for assisting State and local governments in the production, processing and distribution of food resources under radiological emergency conditions.

(e) Assist FEMA with the development, implementation and presentation to the extent that resources permit of training programs for Federal, State and local radiological emergency response personnel.

(f) Provide representation to and support for the FRPCC and the RACs.

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FEMA Rule 44 of the Code of Federal Regulations

Part 351

Subpart C -- Interagency Assignments

351.27 The Department of Defense

(a) Determine appropriate planning bases for department of Defense (DOD) nuclear facilities adn installations (e.g., missile bases, nuclear submarine facilities and weapon storage sites) including distances, time and radiological characteristics.

(b) Develop, with FEMA, representative scenarios from which DOE facilty operators and State and local governments may select for use in testing and exercising radiological emergency plans.

(c) Assist State and local governments, within the constraints of national security and incoordination with FEMA, in the preparation of those portions of their radiological emergency plans related to DOE owned and contractor operated nuclear facilities and radioactive materials in transit.

(d) Provide representation to and support for the FRPCC and the RACs when appropriate.

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PREPAREDNESS

FEMA Rule 44 of the Code of Federal Regulations Part 351

Subpart C -- Interagency Assignments

351.28 The Department of Commerce

(a) Assist State and local governments on determining their requirements for meteorological and hydrolical services for radiological emergencies and assist State and local governments in preparing to meet these requirements within the limits of available resources.

(b) Assist FEMA in developing and promulgating guidance to State and local governments for the preparation of radiological emergency plans.

(c) Participate with FEMA in assisting State and local governments in developing their radiological emergency plans, evaluating exercises to test plans and evaluating the plans and preparedness.

(d) Assist FEMA with the development, implementation and presentation to the extent that resources permit of technical training for State and local officials in the use of meteorological information in responding to radiological emergencies.

(e) Provide representation to and support for the FRPCC and the RACs.

(f) Assist FEMA in the development of guidance for State and local governments on the exposure and location of emergency instrumentation systems for radiation detection and measurement.

(g) The Federal Coordinator for Meterological Services and Supporting Research will,

consistent with the provisions of the Office of Management and Budget Circular A-62, serve as the coordinating agent for any multiagency meterological aspects of assisting State and local governments in their radiological emergency planning and preparedness.

Dated: February 17, 1982
Louis O. Giuffrida,
Director

{FR Doc. 82-6594 Filed 3-10-82, 8:45 am}
Billing Code 6718-01-M

Updated: July 7, 1998

Background on the Emergency Alert System (EAS)

The following information is provided to aid those participating in the Radiological Emergency Preparedness (REP) Program to understand the EAS. Under the EAS, State and local governments, in partnership with the broadcast and cable industries, will be afforded new ways and resources to more effectively provide emergency alerts (signal tones), information and instructions to the American public.

On December 13, 1995, the Federal Communications Commission (FCC), the National Oceanic and Atmospheric Administration (NOAA) and the Federal Emergency Management Agency (FEMA) held a joint press conference at the FCC to announce the change from EBS to the new EAS. This change represented a fundamental shift in the way State and local governments, in partnership with the broadcast industry, provide emergency information and instructions to the public. National implementation of the new EAS began on January 1, 1997, for radio and television stations and began on December 31, 1998, for cable systems with 10,000 or more subscribers. For cable systems with fewer than 10,000 subscribers and for wireless cable systems regardless of the number of subscribers, the effective date for participation will be October 1, 2002.

This change was effected through the use of digital technology that will make it possible for State and local governments and the broadcast industry to automate methods and processes to provide emergency alerts, information and instructions to the public. The use of digital technology for this purpose built upon the use of the new Weather Radio Specific Area Message Encoder (WRSAME) technology developed by NOAA. The specific types of digital technology used with the EAS are encoders and decoders. This equipment functions in a similar fashion as computers except it is tailored to the specific requirements of providing emergency instructions to the public through radio

and television broadcasts. The specifications for the new digital equipment have been promulgated by the FCC in its Rule and Order and is contained in the interim-use FEMA document Emergency Alert System, CPG 1-40 (June 1996). The digital technology equipment has been certified by the FCC to meet these specifications, and has been purchased by the broadcast media.

The use of digital technology provides many benefits over methods formerly used in the EBS. Through the automation of the transfer of information from State and local governments to broadcast stations and finally to the public, the public can be notified much faster and more efficiently. (For example, State and local governments may send emergency instructions to the public within seconds, rather than minutes.) Since all broadcast media were required to purchase the new technology, there is a built-in redundancy to ensure reception of emergency messages by the public.

Equipment located at broadcast stations may function either on an automatic or manual mode. Under the automatic mode, State and local governments may transmit emergency instructions to the public through radio, television and cable stations on a 24-hour basis without the broadcast industry staff's presence or intervention. This is accomplished on an individual basis with each broadcaster and cable operator. The broadcaster or cable operator must set the EAS equipment to auto-forward the message. All EAS messages contain a unique code imbedded in the EAS digital header signal. If the imbedded codes in the EAS equipment match the codes of the incoming message from the government office, the message will be aired automatically.

Some EAS equipment models incorporate a "semi-automatic mode" that delays retransmission of an EAS message. This delay feature allows operators to review the message before it is transmitted over the broadcast station or cable system. The delay usually lasts 15 minutes after which the message is automatically transmitted.

In addition to permitting faster transmission of emergency information and instructions to the public, emergency messages may be targeted to very specific areas impacted by hazards. State and local governments may request activation of the EAS from field locations, provided those arrangements and communications links are agreed to in advance.

An important change resulting from the use of digital technology is the time constraint built into the processing of emergency alerts and instructions.

Based on FCC specifications [Section 11.33(a)(3)(i) of its EAS Rule and Order], the storage capacity of the new EAS digital equipment is set at two minutes. Because of this memory constraint, the length of emergency alert and instructional messages will need to be reviewed and perhaps revised. While additional memory may be added, at minimal cost, to permit longer messages, it will be necessary to retrofit all digital equipment of State and local governments and participating broadcast industries within an operational area(s) to ensure message compatibility. However, if additional memory is desired, it should be determined if equipment within an operational area is adaptable to memory expansion. This technological constraint will require that State and local governments develop new and coordinated approaches to providing emergency alerts and instructions to the public, particularly for hazards like those addressed in the REP Program that may impact large populations. In addition, State and local governments, if adding more memory, need to work with the State and Local Emergency Communications Committees to ensure compatibility of their equipment.

As a condition of licensing, all radio and television stations were mandated by the FCC to purchase and install FCC-certified equipment for implementation of the EAS by January 1, 1997. While waivers are permitted in the FCC's Rule and Order for the broadcast industry, it is not likely that waivers will be granted for stations within the continental United States. State and local governments are not required to participate in the EAS nor to purchase, install and use the new digital equipment.

There are two contexts in which the EAS will be used--Presidentially-initiated alerts and messages and those initiated by State and local governments in concert with the broadcast industry. For Presidentially-initiated alerts and messages, there are 30 radio and television stations that are required to broadcast such transmissions to the American public for national security emergencies. The stations selected for this national system are referred to as National Primary Stations under the EAS.

Radio and television stations are not required to broadcast alerts and messages initiated by State and local governments. Under FCC authorities, the final authority for the broadcast of messages initiated by State and local governments resides with the broadcaster, not the State and local government. The FCC, however, encourages licensees to broadcast emergency alerts as a public service; use of emergency system broadcasting through the EAS is considered part of this service. Thus, if the EAS is used, it is critical that State and local governments work closely with their local

broadcast industry representatives and State and Local Emergency Communication Committees to establish agreed-upon protocols to avoid problems in communicating emergency messages to the public during actual emergencies.

Attachment B

RADIOLOGICAL EMERGENCY PREPAREDNESS (REP) GUIDANCE TO SUPPORT IMPLEMENTATION OF THE EMERGENCY ALERT SYSTEM (EAS)

The guidance provided herein is only relevant to those State and local governments that have opted to voluntarily participate in the new EAS. For those State and local governments that do not wish to participate in the new EAS, their participation in exercises and demonstration of their emergency plans will continue to be evaluated by FEMA on the basis of extant guidance in FEMA-REP-14 and FEMA-REP-15, keeping in mind that the REP Program Strategic Review may result in modifications in this area.

State and local governments that choose to participate in the new EAS should use this guidance to develop their emergency plans and preparedness. However, State and local governments, as in the past, may still propose alternative approaches and methods to FEMA guidance as provided for in FEMA-REP-14, Page B.3.

Regardless of whether or not particular State and local governments choose to participate in the new EAS, it is important that they coordinate their approaches with the broadcast and nuclear industries within their State. State and local government REP planning and preparedness should be coordinated with the State and Local Emergency Communication Committees, which are composed of State and local government and broadcast industry representatives. Also, State and local governments may coordinate and sign Letters of Agreements (LOA) with broadcast stations to ensure that the capability exists for the immediate dissemination of emergency alerts, information and instructions to the public, or alternative approaches under the EAS with Special News Broadcasts. These LOAs should guarantee broadcast of the EAS message as well as (where applicable), broadcast of the Special News Broadcast. However, these various State and Local emergency communications plans, if sufficiently detailed and up-to-date with respect to alerting and notifying the public within the 10-mile Emergency Planning Zone, may obviate LOAs.

The primary catalyst for this guidance is the digital technology requirements of the EAS, especially the memory constraint of two minutes for alert signals and emergency instructions. At some nuclear power sites, depending on the system in place, two minutes is adequate time to convey an EAS message with protective actions and instructions. At other sites, it would be impossible to include such information within a two-minute constraint. Therefore, it is recommended that emergency information and instructions intended for use with the EAS technology in connection with the REP Program be provided to the public in two parts: (1) official EAS message alerts and (2) essential emergency information and instructions in Special News Broadcasts. (see Page B-3 of this guidance)

It should be noted that the content of EAS messages and Special News Broadcasts is dependent on the emergency and, therefore, a great deal of flexibility will be allowed in their content. The following five components comprise the minimum amount of information that should be contained in an initial EAS message:

Identification of the State or local government organization and the official with the authority for providing the EAS alert and message;

- Identification of the commercial nuclear power plant, appropriate Emergency Classification Level (ECL), and current status of radiological conditions at the plant (e.g., no release, potential for release or actual release and wind direction);

- Calling attention to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency;

- The possibility that a protective action may need to be taken by affected populations; and

- A closing statement asking the affected and potentially affected population to stay tuned to this EAS station(s) for additional information. This additional information, when necessary, could be in the form of a "Special News Broadcast" that would, as soon as possible, follow the EAS message.

State and local governments using the EAS will need to make decisions on how they will address the following components of emergency instructions and whether or not to address them within the context of official EAS messages and, when needed, with follow-up Special News Broadcasts. These components are as follows:

1. Identification of precautionary protective actions (if any) for special populations (e.g., school children and transportation-dependent individuals) or by location (e.g., public parks, beaches, etc.);

2. Identification of protective actions (if any) for the general public using familiar landmarks (e.g., political jurisdictions, major highways, rivers, railroads, zip codes, etc.);

3. Identification of evacuation routes;

4. Identification of reception centers for radiological monitoring of evacuees and congregate care centers for lodging of evacuees;

5. . Instructions on how to maximize protection when sheltering (e.g., remain inside, close all windows and doors, shut off any forced air heating or cooling systems);

6. Provision of information addressing and responding to false or misleading rumors, as well as the provision of rumor control numbers to the public;

7. Ingestion-related instructions and information, if appropriate;

8. Reminders on what to take along when evacuating; and

9. Pet information.

Again, State and local governments should select those items listed above (or others they may add, such as Governor's emergency declaration) that would be addressed in either the official EAS message and/or the follow-up Special News Broadcasts.

1. Official EAS Message: The EAS is to be used for providing official

government emergency alerts, information and instructions to the public by authorized State and local government officials. State and local governments are charged under their respective State authorities to provide official emergency instructions to their citizens in order to protect public health, safety and property. Official messages to be used with the EAS must be brief (i.e., less than two minutes, unless the memory capacity of the EAS digital equipment has been expanded to include longer messages). A sample EAS message is provided in Attachment C that addresses this and other topics and meets the two-minute time constraint.

As reflected in the above guidance and the sample EAS message, the primary purpose of official EAS messages is to secure the attention of the affected public and to provide the most essential emergency information and instructions within a time frame of less than two minutes.

2. Special News Broadcast: Within the context of Special News Broadcasts, essential emergency information and instructions need to be provided by State and local governments to supplement that provided in the official EAS message. It is strongly encouraged that broadcasters serving the affected Emergency Planning Zone (or portions thereof) would carry this Special News Broadcast. The topics listed above (or others desired by State and local governments) need to be examined for inclusion within Special News Broadcasts. The Special News Broadcast format could be effected in a number of different ways such as: press conferences with visual aids, live telephone interviews by station broadcasters with State or local government officials and the reading of faxed press releases from State and local officials by broadcasters. See Attachment C for an example of a Special News Broadcast outline.

   If State or local officials decide to alert the public that an emergency situation is in progress at a nuclear power plant, and no precautionary protective actions or protective actions for the general public are issued, the use of a special news broadcast may not be necessary. However, State and local governments need to take appropriate actions to ensure that the capability exists to quickly access broadcast stations for both official EAS messages and Special News Broadcasts. The State and local governments need to also ensure that broadcast industry personnel can be contacted to accommodate transmission of

Special News Broadcasts in the event the station is not staffed. Both provisions should be established through agreements with the State and Local Emergency Communications Committees as part of the State and Operational Area EAS plans. Otherwise, these provisions should be incorporated into a LOA.

As a general rule, it would be helpful for State offsite response organizations to consider in advance the format that might be used for the news conference to ensure better organization and dissemination of information and instructions to the public.

The information and instructions conveyed in the EAS message should determine what is contained in the special news broadcast. The timing of Special News Broadcasts is dependent on the status of the emergency. In situations where instructions for protective actions cannot be completed in the two-minute EAS message, such information should be provided immediately afterward in the Special News Broadcast. Therefore, in fast-breaking events or when plant conditions deteriorate, the special news broadcast should follow the EAS message as soon as possible.

FEMA will work closely with State and local governments and the Nuclear Regulatory Commission to provide technical assistance to correct problems that may arise in order to ensure that the public would be protected in the event of a radiological emergency. The focus of FEMA's evaluation of the implementation of the EAS and provision of technical assistance to State and local governments will be on the following capabilities:

1. to provide both an alert signal and disseminate official EAS messages to the public in the plume Emergency Planning Zone within 15 minutes of the decision by authorized offsite officials to activate the Alert and Notification system to notify the public of an emergency and/or implement protective action recommendations (While all alert and notification sequences should be timed, FEMA's evaluation will be made only for the initial EAS message and only for the first sequence; the 15-minute clock will then stop, with respect to evaluating the 15-minute rule, when the EAS station begins the broadcast, actual or simulated. Since messages may not be actually broadcast, it is assumed that broadcast commences as soon as all

interactions between response organizations and the EAS stations are completed, or when station personnel state that the message is ready for broadcast. An evaluator at the radio station could make such assumptions unnecessary);

2. to prepare and disseminate accurate and timely information and instructions on protective action recommendations vis-à-vis exercise scenarios; and

3. to describe areas impacted by protective action decisions with familiar landmarks.

These three capabilities are viewed as essential to the successful alerting, informing and issuing of protective actions to the public for not only radiological emergencies, but for all types of hazards. However, evaluation of the timeliness and accuracy of emergency information with respect to familiar landmark descriptions will be based on the EAS message itself or a combination of both the EAS message and the special news broadcast.

The key factor in developing and implementing a successful EAS program component will be the coordination effected by the State and local governments with the specific broadcast stations and nuclear utility officials involved for each power plant site with respect to the following functions:

1. use of EAS support equipment;

2. determination as to which operational mode (automatic, "semi-automatic" or manual override) will be used by the EAS stations for broadcasting EAS messages;

3. memory capacity of EAS equipment;

4. identification of specific stations (radio, television and cable) to be used with the EAS;

5. development of prescripted EAS messages and outlines to support Special News Broadcasts;

3. agreement on methods to be used in Special News Broadcasts such as press releases to be read over the air, live interviews by station personnel with State and local government officials, and live or recorded messages from State and local government Emergency Operations Centers.

4. ensuring the radiological emergency response plans are consistent with State and Operational Area plans and Part 11 of the FCC EAS Rules;

5. establishing with the State or Operational Area Emergency Communications Committees which government entity or broadcast facility will encode EAS messages; and

6. ensuring with State or local Emergency Communications Committees, State and local emergency management agencies, etc., which State or local government officials will be authorized to release EAS activation requests.

The planning to address these functions should be coordinated with the respective State and Local Emergency Communications Committees, since they have the overall responsibility for developing each State and local EAS plan. Finally, this coordination should include the development of written agreements between State and local governments and specific EAS station personnel to document the specific protocols and procedures that will be used for radiological emergencies (and other types of emergencies) at commercial nuclear power plants. The refinement of the State EAS plan by the State and Local Emergency Communications Committees from the EBS to the EAS will ensure comprehensive coverage of emergency communications throughout the State.

Attachment C

SAMPLE EAS MESSAGES AND SPECIAL NEWS BROADCAST OUTLINE

Two sample EAS messages that meet the two minute time constraint (which would be supported by a Special News Broadcast that would follow as soon as possible) are provided below. These samples are provided for consideration by State and local governments as they develop their individual

approaches to the EAS.

The first example is based on a General Emergency declaration requiring implementation of protective actions (evacuation and sheltering) at a fictional commercial nuclear power plant. It would be necessary to tailor this guidance for each nuclear power plant, emergency situation and message. This particular example leaves the specific information on evacuation for the Special News Broadcast. In some situations, the information on evacuation, evacuation routes, etc., might be in the EAS message itself.

"This is an Emergency Alert System announcement concerning an emergency at the Duckworth Nuclear Power Plant located near Duckworth, Virginia. The Commonwealth of Virginia Division of Emergency Services, with the authority of Governor Gerald Robinson, issues this message.

A General Emergency has been declared by the Duckworth Power Works Company because of the possibility of a radiation release into the environment from the plant. However, at the present time, no release of radiation has occurred.

Governor Gerald Robinson issued a General Emergency declaration at 10:30 this morning in response to this situation. Because of the potential for releases of radioactivity from the Duckworth Nuclear Power Plant, Governor Robinson has ordered the evacuation of public and private schools near the plant. The Governor also ordered that all persons within about 5 miles of the plant remain inside, close all windows and doors, and shut off any forced air heating or cooling systems.

Please stay tuned to this station for a Special News Broadcast that will have additional instructions on evacuation and sheltering for the public and for specific schools. Also refer to your red and blue 'Public Awareness' brochure or to Page X of the Duckworth Phone Directory for further emergency information. This concludes the broadcast."

(Approximate length of message: 1 minute and 45 seconds.)

Following is a shorter version of the above message, which would allow for a foreign language translation to be included within the two minute message.

"This is an Emergency Alert System announcement concerning a General

Emergency at the Duckworth Nuclear Power Plant located near Duckworth, Virginia. The Commonwealth of Virginia Division of Emergency Services, with the authority of Governor Gerald Robinson, issues this message.

At 10:30 this morning, Governor Gerald Robinson issued an Emergency declaration in response to this situation. Because of the potential for release of radioactivity from the Duckworth Nuclear Power Plant, Governor Robinson has ordered the evacuation of public and private schools near the plant. The Governor also requests that all persons within about 5 miles of the plant remain inside, close all windows and doors, and shut off any forced air heating or cooling systems.

Please stay tuned to this station for additional information. Also refer to your red and blue 'Public Awareness' brochure or to Page X of the Duckworth Telephone directory for further information. This concludes this broadcast."

OUTLINE FOR A SPECIAL NEWS BROADCAST

EAS messages, such as the preceding examples, would be followed as soon as possible by a Special News Broadcast in which detailed instructions would be provided to the public on evacuation and sheltering (and delineated with familiar landmark descriptions). The Special News Broadcast would be provided on the same station(s) on which the EAS message was broadcast, as delineated in the State's EAS and REP plans. This broadcast could be provided in a variety of formats such as a live television briefing with colored maps and charts, telephone interviews by radio and television broadcasters with State and local government officials and the reading of faxed press releases from State and local officials by broadcasters. It is likely that utility and Federal officials might participate in such Special News Broadcasts with State and local government officials depending on the emergency situation and if sufficient time is available for inclusion of other officials. The sample outlines could be developed in the planning process for EAS implementation for different types of radiological emergencies so that they could be quickly modified to address specific scenario events during exercises and actual radiological emergencies.

Examples of the more detailed instructions that would be provided in outline form for exercise evaluation are as follows:

Coverage: Special news broadcast on Channel 4 TV with simultaneous radio broadcast transmission on stations WGYN (98.6 am), WLEZ (103.5 am) and

WCEN (105.5 fm).

Topics and Content

1. Identify Special News Broadcast: This is a follow-up special news broadcast to the EAS alert and message that was issued at 10:15 a.m. concerning a radiological emergency at the Duckworth Nuclear Power Plant.

2. Precautionary protective actions (school evacuation)
    a. Identify the specific schools in the Middleburg School District as well as the private schools from which students were/are being/will be evacuated; and

    b. Identify the location of the host schools where these evacuated students will be taken.
3. Protective actions (general public)
    a. Identify the specific areas for which evacuation is needed with familiar landmarks, reinforced in TV presentations with a large colored plume Emergency Planning Zone (EPZ) map, and evacuation routes:

        1. Individuals in that portion of Loudoun County between route 28 and Interstate 95 bounded by the Potomac River on the east and Bull Run Mountain on the West, proceed in a southerly direction towards Culpepper; State and local government traffic control personnel will direct you to the nearest reception and congregate care centers; [reception and congregate care centers may be identified by name and address during the Special News Broadcast.]

        2. Individuals in that portion of Fairfax County bounded by Interstate 66 and Interstate 95 between the Beltway (Interstate 495) and route 28 to the south, proceed in a Northerly direction towards Frederick, Maryland; State and local government traffic control personnel will direct you to the nearest reception and congregate care centers. [reception and congregate care centers may be identified by name and address during the Special News Broadcast.]

3. Individuals in Fauquier County are advised to evacuate in a Westerly direction to Winchester County; State and local government traffic personnel will direct you to the nearest reception and congregate care centers; [reception and congregate care centers may be identified by name and address during the Special News Broadcast.]

b. Information on special population groups (e.g., school children, handicapped persons, nursing homes): The school children at Lincoln Elementary have been relocated to Washington Elementary, and may be picked up at that location. [Give address of school.]

c. Identify the specific areas for which in-place sheltering is advised:
    1. Individuals residing in that portion of Loudoun County West of Bull Run Mountain; and

    2. Individuals residing in that portion of Fairfax County between the Beltway (Interstate 495) and route 28 to the Potomac River.

d. Specific actions recommended for in-place sheltering:
    1) Remain in your home or office until such time that you receive further emergency instructions from one of the EAS broadcast stations identified above (repeat station identifications);

    2) Close all windows and doors and shut off any forced air heating or cooling systems; and

    3) Be prepared to quickly evacuate if so instructed by Governor Robinson.

4. Actions you need to be prepared to take if you are advised to evacuate:

    1. Have important personal resources (e.g., medicine) ready;

2. Provide food and water for pets remaining in home; and

3. Turn off heat and air conditioning system(s).

5. Provide rumor control numbers: 703-445-6385; 703-445-6386 and 703-445-6367.

6. Reference availability and use of emergency information brochures and other emergency information: Refer public to emergency information brochures on the Duckworth Nuclear Power Plant and highlight emergency information and instructions.

7. Remind viewers/listeners to stay tuned to the EAS station for further information and emergency instructions.

REBROADCAST OF EAS MESSAGES

The EAS technology may provide for the automatic rebroadcasting of messages at certain determined intervals inserted by offsite State and local emergency authorities. EAS equipment ignores retransmitting messages with identical headers. However, transmitting the same EAS message several times can be accomplished manually or automatically with the appropriate software or hardware. State and local governments, to the extent possible with variable scenarios, should work closely with broadcast personnel to determine re-broadcast protocols, including the frequency for rebroadcasting EAS messages. Since the intent of the EAS is to alert and warn the public of imminent hazards, the primary function of the EAS should be preserved, and its use should not become routine. In today's broadcast media milieu, the rebroadcasting of emergency information would be abundantly available through regular news broadcasts.

FEMA Radiological Emergency Preparedness Banner

REP Tabletop Exercise

A generic tabletop exericse is being developed that will train Regional staff in their emergency assignments in accordance with the Federal Response Plan to deal with incidents at commercial nuclear power plants. The tabletop is intended to familiarize Regional staff with emergency responsibilities, notification and communication, information gathering and coordination, reporting procedures, and how to process State requests for Federal assistance.

The tabletop exercise will be used as a training tool to rehearse actual Federal participation in REP exercises. Its first implementation is planned for February 1998 to prepare FEMA Regions II and III for the Artificial Island ingestion exercise in May 1998.

Updated: July 11, 2001

REP Program Strategic Review

Regional Director's Memo - REP Strategic Review Initiatives Update

Status of the REP Program Strategic Review as presented by O. Megs Hepler, III, Director, Exercises Division, to the Preparedness, Training, and Exercise Committee of the National Emergency Management Association on February 10, 1997.

Highlights from the March 5-7, 1997, Strategic Review Steering Committee meeting.

Highlights from the June 8-11, 1997, Strategic Review Steering Committee meeting.

Letter of intent regarding Strategic Review At-Large Stakeholders meetings.

Strategic Review Concept Papers

Transcripts from Strategic Review At-Large Stakeholders Meetings

Regional Director's Memo - REP Strategic Review Initiatives Update

MEMORANDUM: Regional Directors
FEMA Regions I-VII, IX and X

FROM : Russell Salter
Chair
Oversight Working Group

SUBJECT: Update on Implementation of the Radiological Emergency Preparedness (REP) Program Strategic Review Recommended Initiatives

The purpose of this memorandum is to provide you with the status of implementation of the strategic review recommendations and to request that a copy of this memorandum be shared with the States and other members of your REP community.

During the last National REP Conference, held March 29-31, 1999, in Baton Rouge, Louisiana, I presented a strategy for implementing the final recommended initiatives to streamline the REP Program. This approach was very well received by the Conference attendees.

The first step of the implementation strategy was the establishment of an intergovernmental/industry Oversight Working Group (OSWG) to oversee implementation of the strategic review recommended initiatives. The OSWG includes representatives from Federal Emergency Management Agency (FEMA) Headquarters and Regions; the Nuclear Regulatory Commission; tribal nation, State, and local governments; and the nuclear industry. The OSWG members provide representation from each of our REP constituencies. (A list of the OSWG membership is at Attachment A.) The OSWG will recommend the process and instrumentation needed to implement the recommended initiatives and monitor progress. Any items requiring additional approval will be forwarded to FEMA management for a final decision. It is anticipated that the OSWG members will serve for a period of approximately one year from the date of the first meeting, which was held May 25-27, 1999.

During its first meeting, the OSWG agreed that the recommended initiatives can be addressed under seven distinct categories: (A list of initiative numbers and titles is at Attachment B.)

- **Criteria Development**: recommended initiatives 1.1A through F.
- **Demonstration**: recommended initiatives 1.2, 1.3, 1.6, 1.7, 1.11, 2.0, 2.1, 2.2, 2.4, 2.5, 3.0, and 3.3.
- **Corrections/Improvements**: recommended initiatives 1.4 and 1.5.
- **Annual Letter of Certification**: recommended initiatives l.8, 1.9, 1.10, and 1.12.
- **Tribal Nations**, recommended initiatives 4.0-4.4;
- **Guidance**, recommended initiatives l.13 and 1.16 and,
- **Training**, recommended initiatives 5.0-5.4.

For each of these categories, the OSWG carried out a coordinated, point-by-point, review and discussion of the recommended initiatives against the corresponding comments received from the REP stakeholders. The OSWG completed its review of all the recommended initiatives and reached agreement as to the desired products, a method for attaining them, and projected timeframes for final implementation of the initiatives.

Outlined below are recommended initiatives to be implemented immediately, based on recommendations made during the May 25-27, 1999 meeting of OSWG:

- Initiative 1.2, Reduce Frequency of Demonstration: The frequency of Medical Drill evaluation is reduced from annual to biennial. Annual Medical Drills will still be required but will be evaluated every other year.

- Initiative 1.3, Negotiate Use of Out-of-Sequence: This initiative is in place, including, but not limited to, the "YES" items listed in Table 1, "Federal Evaluation Process Matrix" (copy at Attachment C).
- Initiative 1.4, Give Direct Feedback: This initiative is in place and FEMA will emphasize the need for consistent application among the Regions.
- Initiative 1.5, Correct Issues Immediately: Immediate correction has been adopted for situations where FEMA and the offsite response organization are in agreement that such correction is appropriate.

FEMA will provide the specifics on this to the REP community shortly.

With respect to recommended Initiative 1.6, Expand the Use of Credit:

- FEMA Headquarters has considered whether to delegate to the Regional Directors the authority to approve requests for response to a real-life emergency. Headquarters weighed the pros and cons and decided to retain this authority at Headquarters, with the assurance that the requests will be processed in a timely manner by Headquarters.

- The use of credit will be expanded, as was discussed at the OSWG meeting, using the "YES" entries in the Credit column of the "Federal Evaluation Process Matrix." The Core Document will contain criteria and procedures for requests for exercise credit for a real-event response.

FEMA and the OSWG also identified a need for providing timely implementation information to the REP community for information and comment. To that end, FEMA has established the following:

- A menu-driven hot line to provide REP stakeholders access to information related to implementation of the strategic review’s recommended initiatives. The hotline phone number is:

  1-800-630-1121

- A public information bulletin board, accessible via the internet at fema.gov, that

  will allow users to review and provide comments on OSWG and other Program documents. The complete internet address for the bulletin board is:

  http//www.fema.gov/pte/carep.htm

Select "Program Documents" to view a document and "Comment and/or question

form" to comment on a document.

We welcome your feedback on the OSWG's initial steps. The OSWG will meet again on August 31, 1999.

Should you have any questions concerning this memorandum, please contact Vanessa E.

Quinn, Acting Chief, Radiological Emergency Preparedness Branch, at (202) 646-3664. You may also contact me at (202) 646-3030.

Attachments

Attachment A

REP STRATEGIC REVIEW IMPLEMENTATION

OVERSIGHT WORKING GROUP (OSWG)

MEMBERS and CONTACT INFORMATION

Member Name	Office	Address	Voicemail	Pager	E-Mail
Russell Salter	Director, Chemical and Radiological Preparedness Division	FEMA, 500 C Street, SW, #614 Washington, DC 20472	202-646-3030	1-800-SKY-8888 #71843	Russell.salter@fema. gov FAX: 202-646-4321
Vanessa Quinn	Acting Chief, REP Branch	FEMA, 500 C Street, SW, #514 Washington, DC 20472	202-646-3664	1-800-SKYPAGE 8954616	Vanessa.quinn@fema.gov FAX: 202-646-3508
Douglas Boggs	Coordinator, Hazardous Materials and Emergency Services	Post Office Box 818 Spotsylvania, Virginia 22553	540-582-7037	540-310-4588	Dboggs@spotsylvania.va.us FAX: 540-582-6957

Nancy Crowley	Director Manitowoc Emergency Management	1025 South 9th Street, Manitowoc, Wisconsin 54220	920-683-4207	920-576-3199	Mcem@tcbi.com FAX: 920-683-4568
James Hardeman	Manager, Environmental Radiation Program, Dept. of Natural Resources	4244 International Parkway, Suite 114, Atlanta, Georgia 30354	404-362-2638	404-655-7500	Jim_Hardeman@mail.dnr.state.ga.us FAX: 404-362-2653
Leigh Trocine	Incident Response (TWFN 4L3)	Nuclear Regulatory Commission Washington, DC 20555-0001	301-415-6415	301-798-6959	Lxt@nrc.gov FAX: 301-816-5151
Falk Kantor	Radiological Protection and Emergency Preparedness (OWFN 12G13)	Nuclear Regulatory Commission Washington, DC 20555-0001	301-415-2907		Fxk@nrc.gov FAX: 301-415-2968

OSWG

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Sandra Paice	Chair, National REP Conference – 2000	Nebraska Emergency Management Agency 1300 Military Road Lincoln, Nebraska 68508	402-471-7408	402-560-1922	Sandra.Paice@nema.state.ne.us FAX: 402-471-7433
Larry Robertson	Region IV RAC Chair	FEMA - Region IV 3003 Chamblee-Tucker Road Atlanta, Georgia 30341	770-220-5466	1-800-SKYPAGE 2619653	Larry.Robertson@fema.gov FAX: 770-220-5275

Daniel McElhinney	Region I RAC Chair	FEMA – Region I 442 J.W. McCormack POCH Boston, MA 02109	617-223-9567		Dan.McElhinney@fema.gov FAX:
Stephen Borth	Training Specialist	NETC 16825 South Seton Avenue Emmitsburg, MD 21727	301-447-1249	1-800-SKYPAGE 1135197	Steve.Borth@fema.gov FAX: 301-447-1598

SUPPORT STAFF

NAME	TITLE	ADDRESS	VOICEMAIL	PAGER	E-MAIL
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Attachment B

REP PROGRAM STRATEGIC REVIEW

FINAL RECOMMENDED INITIATIVES

RECOMMENDED INITIATIVE 1: STREAMLINE THE REP PROGRAM

Action A. Streamline the exercise evaluation process by consolidating, combining and/or eliminating objectives and evaluation criteria.

Recommended Initiative 1.1: Establish Evaluation Areas for Consolidation of Objectives into Sub-elements:

a. **Emergency Operations Management**

b. Protective Action Decisionmaking

c. **Protective Action Implementation**
d. **Field Measurement and Analysis**
e. **Emergency Notification and Public Information**
f. **Support Operations/Facilities**

Recommended Initiative 1.2: Reduce Frequency of Demonstration.

Recommended Initiative 1.3: Negotiate Use of Out-of-Sequence Demonstrations

Recommended Initiative 1.4: Give Direct Feedback.

Recommended Initiative 1.5: Correct Issues Immediately

Recommended Initiative 1.6: Expand the Use of Credit.

Action B. Increase Flexibility in Exercise Scenarios

Recommended Initiative 1.7: Implement New Options.

Action C. Annual Letter of Certification

Recommended Initiative 1.8: Revise ALC-related Regulations

Recommended Initiative 1.9: Revise ALC Submittal Requirements

Recommended Initiative 1.10: Verify ALC Documentation.

Action D. Provide Additional Approaches that can be Used in Conjunction with a Streamlined Program to Demonstrate and Confirm Reasonable Assurance

Recommended Initiative 1.11: Negotiate Six-Year Agreements.

a. Evaluated Radiological Focus Drills

b. Evaluated Functional Drills
c. Evaluated Post-Plume Only Exercise

d. State Assessment

e. FEMA Verification and Program Reviews

Recommended Initiative 1.12: Conduct Staff Assistance Visits.

Action E. Revise REP Policy and Guidance to Support a Streamlined Program

Recommended Initiative 1.13: Develop a REP Program Handbook

Recommended Initiative 1.14: Revise NUREG-0654/FEMA-REP-1.

Recommended Initiative 1.15: Review Guidance Biennially.

Recommended Initiative 1.16: Post guidance on the REP Home Page.

RECOMMENDED INITIATIVE 2: INCREASE FEDERAL PARTICIPATION IN REP EXERCISES

Recommended Initiative 2.1: Have FEMA Take the Lead Role.

Recommended Initiative 2.2: Complete the Radiological Incident Annex.

Recommended Initiative 2.3: Establish an Interagency Taskforce.

Recommended Initiative 2.4: Identify Additional Resources.

Recommended Initiative 2.5: Reinforce the FRPCC's Role.

Recommended Initiative 2.6: Revise Training Courses.

Recommended Initiative 2.7: Facilitate Communications.

RECOMMENDED INITIATIVE 3: USE STATE, TRIBAL, AND LOCAL PERSONNEL AS FEDERAL EVALUATORS

Recommended Initiative 3.1: Establish Conditions.

Recommended Initiative 3.2: Develop an MOU.

Recommended Initiative 3.3: Develop Qualification Standards.

RECOMMENDED INITIATIVE 4: INCLUDE NATIVE AMERICAN TRIBAL NATIONS IN THE REP PREPAREDNESS PROCESS

Recommended Initiative 4.1: Identify Areas for REP Relationship

Recommended Initiative 4.2: Identify tribes in the EPZs.

Recommended Initiative 4.3: Identify Current Policies and Practices.

RECOMMENDED INITIATIVE 5: ENHANCE THE REP TRAINING PROGRAM

Recommended Initiative 5.1: Establish Qualification Standards.

Recommended Initiative 5.2: Increase Training Opportunities.

Recommended Initiative 5.3: Revise Radiological Courses.

Recommended Initiative 5.4: Develop an Administration Course.

Attachment C

TABLE 1

FEDERAL EVALUATION PROCESS MATRIX

Evaluation Area	**Consolidate**	**Frequency**	**Out-of-Sequence of Exercise Scenario**	**Credit**	**Staff Assistance Visit**
A. Emergency Operations Management	1, 2, 3, 4, 5, 14, 17, 30				
Mobilization of Response Personnel		Every Exercise	NO	YES	NO
Facilities		Once if new[1]	NO	YES	YES
Direction and Control		Every Exercise	NO	NO	NO
Communications Equipment		Once if new[1]	YES	YES	YES
Equipment and Supplies to Support Operations		Every Exercise	YES	YES	YES
B. Protective Action Decisionmaking	5, 7, 9, 14, 15, 16, 17, 26, 28				
Radiological Exposure Control		Every Exercise	YES	YES	YES

Development of Dose Projections and Protective Action Recommended Initiatives and Decisions		Every Exercise	NO	NO	NO
Consideration for the Protection of Special Populations		Every Exercise	NO	NO	NO
Determination of Traffic and Access Control		Every Exercise	NO	YES	NO
Dose Projection and Decisionmaking for the Ingestion Exposure Pathway[2]		Once in 6 yrs.	NO	NO	NO
Decisions Concerning Relocation, Re-entry, and Return[2]		Once in 6 yrs.	NO	NO	NO
C. Protective Action Implementation	5, 14, 15, 16, 17, 27, 29				
Emergency Worker Exposure Control		Every Exercise	YES	YES	NO
Implementation of KI Decision		Once in 6 yrs.	YES	NO	NO
Actions to Limit Exposure of Special Populations		Once in 6 yrs.[3]	YES	YES	YES
Establishment of Traffic and Access Control[4]		1 per Organization per exercise	YES	YES	YES
Implementation of Ingestion Pathway Decisions		Once in 6 yrs.	NO	NO	NO

Implementation of Relocation, Re-entry, and Return decisions		Once in 6 yrs.	NO	NO	NO
D. Field Measurement and Analysis	6, 8, 24, 25				
Ambient Radiation Monitoring		Every Full Participation Exercise	YES	YES	NO
Airborne Radioiodine and Particulate Activity Monitoring		Every Full Participation Exercise	YES	YES	NO
Collection and Analysis of Environmental Samples		Once in 6 yrs.	YES	YES	NO
E. Emergency Notification and **Public Information**	10, 11, 12, 13				
Activation of the Prompt Alert and Notification System[5]		Every exercise	NO	NO	NO
Activation of the Prompt Alert and Notification System (Fast Breaking)	10	Separate Drill once in 6 yrs.	NO	NO	NO
Development of Emergency Instructions		Every exercise	NO	NO	NO
Provision of information to the media		Every exercise	NO	NO	NO
Establishment of a Public Inquiry System		Every exercise	NO	YES	NO

F. Support Operations/Facilities	18, 19, 20, 21, 22				
Monitoring, Decontamination and Registration of Evacuees and Emergency Workers[3]		Once in 6 yrs.	YES	NO	NO
Monitoring and Decontamination of Vehicles and Equipment[3]		Once in 6 yrs.	YES	NO	NO
Temporary Care of Evacuees[6]		Once in 6 yrs.	YES	YES	YES
Transportation and Treatment of Contaminated, Injured, and/or Exposed Individuals		Every 2 years	YES	YES	NO

[1] Will be evaluated if new or changed substantially.

[2] The plume phase and the post-plume phase (ingestion, relocation, re-entry and return) can be demonstrated separately.

[3] All facilities must be evaluated once during the six-year exercise cycle.

[4] Physical deployment of resources is not necessary.

[5] This sub-element does not address the "fast-breaking" scenario and the 15-minute requirement.

[6] Facilities managed by the American Red Cross (ARC), under the ARC/FEMA MOU, will be evaluated once when designated or when substantial changes occur; all other facilities not managed by the ARC must be evaluated once in the six-year exercise cycle.

Updated: July20, 1999

Status of the REP Program Strategic Review

As Presented by O. Megs Hepler, III, Director, Exercises Division,
to the Preparedness, Training, and Exercise Committee
of the National Emergency Management Association
on February 10, 1997

Good afternoon. I am Megs Hepler, Director of the Exercises Division in FEMA's Preparedness, Training, and Exercises Directorate. I welcome the opportunity to meet with you today to discuss topics related to the Radiological Emergency Preparedness (REP) Program. I know that you will be particularly interested in an update on FEMA's REP Strategic Review process.

REP PROGRAM STRATEGIC REVIEW

When I met with you this past September, I discussed FEMA's decision to conduct a strategic review of the REP Program and the circumstances leading up to this decision. I also described some steps that had been taken to start the process, including the July publication of a Federal Register notice announcing the Strategic Review and requesting comments.

The comment period for responding to the Federal Register notice ended on October 28, 1996, so I can now outline for you some observations from a preliminary review of the comments received.

Synopsis of Federal Register Comments

Comments from 60 entities were received in response to the Federal Register notice. The commenters represented other Federal agencies, States and State associations, counties, municipalities, utilities, and the industry association.

A preliminary look at the comments received indicates that they are very well taken and contain many valuable observations and recommendations. It is particularly heartening to note that the responders did not just identify a particular REP Program issue but also offered creative, constructive suggestions for resolving that issue.

Although some contradictory views were expressed, which is to be expected, there were many areas of agreement among the commenters' recommendations. Many of the issues noted by the commenters are not new; in fact, a number of issues identified at the FEMA REP Conference were also raised by responders to the Federal Register notice.

However, although the issues are not new, the mechanisms suggested by the commenters to deal with many of these issues are innovative. I'd like to give you a preview of some of these recurring themes:

- Require MS-1 drills to be held only once every two years.
- Make exercise scenarios more realistic and more varied, and place more emphasis on the ingestion/recovery phase of the emergency.
- Eliminate all but radiologically specific activities from exercise evaluation.
- Establish a means to give REP exercise credit for capabilities demonstrated during non-radiological emergency responses.
- Involve the Federal government as players in REP exercises to a greater extent than at present.
- Use State personnel as exercise evaluators for other jurisdictions and permit self-evaluation in lieu of some currently required FEMA evaluations.
- Update plans as needed, not necessarily annually, and if the update is minor, do not require pre-approval from FEMA.
- Streamline REP guidance and consolidate the resulting revised guidance into one document.

There was one important precept underlying many of the submitted comments, that is, that FEMA and the exercise players should consider exercises to be non-adversarial opportunities for performance demonstration and constructive feedback, followed by immediate remedial action to ensure that the player making the error receives timely correction and training. This is truly the definition of a working partnership between FEMA and the exercise participants.

Training and readiness aspects were stressed, rather than merely "passing the exercise." Of course, all activities would be performed with the health and safety of the public in mind.

Strategic Review Steering Committee

As the next step in the strategic review, FEMA established a Strategic Review Steering Committee (SRSC) in late October of 1996. The SRSC is responsible for guiding the strategic review process and, ultimately, proposing specific

modifications to the REP Program pending the approval of FEMA's Director.

As I mentioned in my remarks to you in September, Federal Advisory Committee Act (FACA) constraints limit SRSC membership to the Federal government; thus, SRSC membership is taken from FEMA Headquarters and Regions and the Nuclear Regulatory Commission (NRC). More specifically, Committee members include three RAC Chairs, two Regional Preparedness, Training, and Exercises Division Directors, representatives of two FEMA Headquarters divisions, and two representatives from the NRC--one from the emergency preparedness regulatory office and one from emergency response.

Ms. D. Anne Martin, Deputy Director of my Exercises Division, is the Chair. The first meeting of the SRSC was held the week of January 28-31, 1997, in Denton, Texas. Fourteen SRSC members and alternates attended this meeting.

This was an intensive working meeting, with a mandate to:

- Agree on the scope and nature of the SRSC's role,
- Ratify the SRSC charter,
- Identify the most critical issue areas to be addressed, in light of responses to Federal Register notice; issues raised at Regional Workshops sponsored by Regions III, V, VI, and X; resolutions submitted by NEMA and Conference of Radiation Control Program Directors; and responses to a request for comments from FEMA's Headquarters and Regional staff.
- Establish the methodology and structure for analyzing these issues, and
- Determine the objectives and timeline for future Committee activities.

In addition, the SRSC considered possible ways to provide additional opportunities for non-Federal input into the strategic review process. The Steering Committee will be meeting on a regular basis; the next meeting will be held at the beginning of March 1997 in Washington, DC.

Conclusion

I thank you again for the opportunity to share the details of the REP strategic review and our RAC Chairs Advisory Committee with you.

Updated: June 13, 1997

Strategic Review Steering Committee Meeting Highlights

March 5-7, 1997

The March 5-7, 1997, Strategic Review Steering Committee (SRSC) meeting focussed on four areas--presentation of previously-assigned issue papers, briefing of relevant topics, assignment of future issue papers, and additional exploration of certain issues.

Issue Papers

As agreed at the first SRSC meeting, subgroups of SRSC members developed and presented preliminary papers on the following issues:

- The role of partnership in the Radiological Emergency Preparedness (REP) Program.
- All-hazards approach and how it relates to the REP Program.
- Alternatives to the current configuration of the REP Program.
- Feasibility of reducing the size of the plume pathway Emergency Planning Zone.

Briefings

Appropriate Federal Emergency Management Agency/Nuclear Regulatory Commission staff members provided informational briefings on the following topics:

- Federal Advisory Committee Act (FACA)--How to involve non-Federal entities in the Strategic Review process.
- Government Performance and Results Act(GPRA)/Strategic Planning--How the REP Strategic Review relates to the GPRA and Strategic Planning.
- Comprehensive Exercise Program (CEP)--How the REP exercise program fits into the CEP.
- REP Home Page--Use of the Home Page to disseminate SRSC Meeting Highlights and other REP-related information as widely as possible.

Future Papers

Members of the SRSC agreed to provide papers on the following additional issues:

- Bringing REP stakeholders into the Strategic Review without violating FACA.
- Pros and cons of a REP Program focussed on outcome versus process.
- Additional methods of delivering REP-related training.
- Examination of frequency of Medical Services drills.

The SRSC agreed to additional exploration of the following topics:

- Partnership
- Radiological vs. non-radiological response activities
- Alternative approaches

The papers listed above will be presented to SRSC members during a series of conference calls. The next SRSC face-to-face meeting will take place in mid-May.

Updated: June 13, 1997

Strategic Review Steering Committee Meeting Highlights

June 8-11, 1997

- The principal focus of the June Strategic Review Steering Committee (SRSC) meeting was to determine how to bring REP community stakeholders into the REP strategic review process.

- Two categories of stakeholders were identified:

    - Government Stakeholders are those recognized under the provisions of the Unfunded Mandates Reform Act, i.e., State, tribal, and local governments.

    - At-Large Stakeholders are members of the REP community as a whole, including private citizens, public interest groups, and utilities.

- Government Stakeholders will be brought into the process via a meeting of representatives of State, tribal, and local governments.

- Letters will be sent to the Governors of all States with REP Program responsibilities and to corresponding Indian tribal nation contacts.

    - The REP State Governors will be invited to name no more than two State representatives, since many REP States have separate emergency preparedness and radiological health agencies, and one local representative for each site within the State.

    - Each applicable Indian tribal nation will be invited to select two representatives.

- The Government Stakeholders meeting will be held the week of September 8th in Kansas City and will be a three day meeting.

- Attendees at the Government Stakeholders meeting will address various concepts

developed by the SRSC.

    - These concepts are based on issues raised by commenters responding to the Federal Register notice, by attendees at REP Regional workshops, and by other members of the REP community.

- In addition, meeting attendees will be given the opportunity to participate in one of the focus groups on subjects that were synthesized from responses to the initial Federal Register notice and from other comments.

    - These subjects will be treated as stand-alone topics.

- The REP community as a whole will have two other opportunities to participate, that is, during the At-Large Stakeholder meetings and in response to the subsequent Federal Register notice requesting comments on the SRSC's recommendations.

    - These meetings, which will be held in each of the three FEMA territories, are tentatively planned for early this December.

    - The meetings will be for one day and will be noticed in the Federal Register.

- The SRSC will review input from the Government and At-Large Stakeholder meetings and submit proposed recommendations to the FEMA Director for review.

- The resulting recommendations will be published in the Federal Register for comment, and then final recommendations will be forwarded to the Director.

Updated: August 11, 1997

Letter of Intent Regarding Strategic Review At-Large Stakeholders Meetings

October 23, 1997

Dear Designated Government Stakeholder:

During the Designated Government Stakeholders meeting in Kansas City last month, the Radiological Emergency Preparedness Program Strategic Review Steering Committee (SRSC) indicated that West Coast, Central U.S., and East Coast At-Large Stakeholder meetings would be held during the month of December and a notice would be published in the Federal Register.

The SRSC still intends to hold the December meetings, currently scheduled for the following dates and locations:

December 2 San Francisco, California
December 4 St. Louis, Missouri
December 5 Washington, D.C.

Due to the current budget situation in which the Federal Emergency Management Agency (FEMA) is operating under a Continuing Resolution, a firm commitment to hold the December meetings cannot be made at this time. A Federal Register notice announcing the meetings is being held in abeyance until FEMA's spending plan is approved, which is currently estimated for mid-November.

We realize that some Designated Government Stakeholders who would like to attend an At-Large-Stakeholders meeting are under a time constraint for initiating their travel requests. In order to assist you in making your travel plans, we are forwarding this Letter of Intent in advance of confirmation that the December meetings will be funded. When we receive confirmation that funding is available, we will publish a Federal Register notice formally announcing the At-Large Stakeholder meetings and immediately place an announcement on the REP Home Page.

If you have any questions, please feel free to contact Nancy H. Goldstein at (202) 646-

4285.

Sincerely,

D. Anne Martin
Chair
Strategic Review Steering Committee

Updated: October 28, 1997

PREPAREDNESS

Strategic Review Concept Papers

Below are four concept papers developed by the Strategic Review Steering Committee. The concept papers were generated from comments received in response to the Federal Register notice of July 8, 1996, and from other sources, such as Regional REP Conferences, and are intended to elicit stakeholder comment. Just as the comments received addressed REP issues from many different perspectives, the concept papers also reflect a variety of perspectives. The four concept papers explore alternative approaches to accomplishing the Federal Emergency Management Agency's determination of reasonable assurance. As concept papers, these "food for thought" documents serve to help brainstorm approaches and to solicit comment; these papers are not to be construed as recommendations for streamlining.

If you wish to forward written comments, they will be most helpful to the Committee if submitted to Nancy H. Goldstein, Room 514, Federal Emergency Management Agency, 500 C Street, SW, Washington, D.C. 20472, by January 23, 1998.

Delegated State

Exercise Streamlining / Sample Guidance and Evaluation Manual for REP Exercises

Focus on Radiological Aspects of REP vis-a-vis All-Hazards Aspects of REP

Partnership in the REP Program

These documents can also be viewed using Adobe Acrobat Reader:

Delegated State

Exercise Streamlining / Sample Guidance and Evaluation Manual for REP Exercises

Focus on Radiological Aspects of REP vis-a-vis All-Hazards Aspects Aspects of REP

Partnership in the REP Program

Updated: July 7, 1998

Federal Register Notices

The Federal Register is the official vehicle used by Federal agencies to inform the public of various actions and intentions of the government. The following Federal Register Notices are retrievable from the Federal Register Online via GPO Access [use the document identification number as the "search term."]:

- Federal Register Notices, June 11, 2001
  Exercise Evaluation Methodology and *Alert and Notification*
- Final Rule: 44 Code of Federal Regualtions Part 354, *Fee for Services To Support FEMA's Offsite Radiological Emergency Preparedness Program*,dated March 24, 1995; Document ID#: **fr24mr95-22**
- Draft Document: *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Criteria for Emergency Planning in an Early Site Permit Application)*, dated May 14, 1996; Document ID#: **fr14my96-84**
- Public Meeting: *Federal Purchase and Stockpile of Potassium Iodide for Use by the General Public in a Radiological Emergency*, dated May 17, 1996; Document ID #: **fr17my96-56**
- Interim-Use and Comment Document: *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Criteria for Protective Action Recommendations for Severe Accidents)*, dated August 26, 1996; Document ID#: **fr26au96-106**
- *Notice of the Federal Emergency Management Agency's Intent To Conduct a Strategic Review of Its Radiological Emergency Preparedness Activities*, dated July 8, 1996; Document ID#: **fr08jy96-67**
- *Notice of Extended Period for Public Comments on the Federal*

Emergency Management Agency's Notice of Intent to Conduct a Strategic Review of its Radiological Emergency Preparedness Activities, dated July 29, 1996; Document ID#: **fr29jy96-86**

- *Notice of Radiological Emergency Preparedness Program Strategic Review At-Large Meetings*, dated November 12, 1997; Document ID#: **fr18no97-55 [See also NOTICE: Change of San Francisco Meeting]**
- *Peter G. Crane; Receipt of an Amended Petition for Rulemaking*, dated December 17, 1997; Document ID#: **fr17de97-22**

Updated: June 13, 2001

FOOTER: FEDERAL EMERGENCY MANAGEMENT AGENCY

REP Banner, this is an image map, please refer to text links below.

REP logo; FEMA Radiological Emergency Preparedness

Federal Register Notices

The files below are provided in Adobe Acrobat Portable Document Format. The Acrobat Reader needed to view the files can be downloaded FREE. If you have accessibility problems viewing any PDF document on these pages, go to http://access.adobe.com/simple_form.html and use the online conversion tools to obtain the document in text format.

- Adobe Acrobat PDF icon Exercise Evaluation Methodology, 228 Kb PDF Document or in Text Format
- Adobe Acrobat PDF icon Alert and Notification, 36 Kb PDF Document or in Text Format

Federal Register

Monday,
June 11, 2001

Part IV

Federal Emergency Management Agency

Radiological Emergency Preparedness: Exercise Evaluation Methodology; Alert and Notification; Notices

FEDERAL EMERGENCY MANAGEMENT AGENCY

Radiological Emergency Preparedness: Exercise Evaluation Methodology

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: The Federal Emergency Management Agency (FEMA) proposes to revise the Radiological Emergency Preparedness Exercise Manual (REP–14) dated September 1991 by adopting the six Exercise Evaluation Areas described in this notice in place of the 33 REP–14 Objectives that are set out in Section D of REP–14. If the Exercise Evaluation Areas described in this notice are adopted, Radiological Emergency Preparedness exercises conducted pursuant to 44 CFR 350.9 will be evaluated against the criteria set out in this notice. The proposed frequency with which each of the proposed Exercise Evaluation Areas will be evaluated is also contained in this notice. Adoption of the proposed changes to REP–14 will render a companion manual entitled Radiological Emergency Preparedness Exercise Evaluation Methodology (REP–15) dated September 1991 obsolete. If the proposed changes to REP–14 are adopted, FEMA plans to rescind REP–15 and utilize a new form entitled ''Evaluation Module'' to document evaluations. We invite comments on the Exercise Evaluation Areas and the proposed frequency for exercising each area and the Evaluation Module form.

DATES: FEMA must receive comments on or before August 10, 2001.

ADDRESSES: You may submit your comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, or send them by e-mail to *rules@fema.gov*. Please reference ''REP Exercise Evaluation Areas'' in the subject line of your e-mail or comment letter.

FOR FURTHER INFORMATION CONTACT: Vanessa Quinn, Chief, Radiological Emergency Preparedness Branch, Chemical and Radiological Preparedness Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472; telephone: (202) 646–3664, or e-mail: *vanessa.quinn@fema.gov*, or Nathan S. Bergerbest, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC 20472, telephone: (202) 646–2685, or (e-mail) *nathan.bergerbest@fema.gov*.

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) proposes to revise the Radiological Emergency Preparedness Exercise Manual (REP–14) [1] dated September 1991 by adopting the six Exercise Evaluation Areas described in this notice and deleting the thirty-three REP–14 Objectives that are set out in Section D of REP–14. If the Exercise Evaluation Areas described in this notice are adopted, Radiological Emergency Preparedness exercises conducted pursuant to 44 CFR 350.9 will be evaluated against the criteria set out in this notice.[2]

Adoption of the proposed changes to REP–14 will render a companion manual entitled Radiological Emergency Preparedness Exercise Evaluation Methodology (REP–15) dated September 1991 obsolete. If the proposed changes to REP–14 are adopted, FEMA plans to rescind REP–15 and utilize a new form entitled ''Evaluation Module'' to document evaluation activities. The rescission will be effective on the same date upon which the changes to REP–14 are effective and the Evaluation Module form will be effective on the same date. We invite comments on the Exercise Evaluation Areas and the proposed frequency for exercising each area and the Evaluation Module form.

Background on Exercise Evaluation

FEMA, through its Radiological Emergency Preparedness Program (REP) conducts exercises to evaluate the ability of Offsite Response Organizations (OROs) to respond to an emergency involving a commercial nuclear power plant. These exercises are conducted in accordance with FEMA regulations, which appear in 44 CFR part 350.[3] Although § 350.9 is the portion of Part 350 that primarily speaks to exercises, it does not specifically address the standards under which exercises are to be conducted and performance is to be evaluated. These standards are addressed in 44 CFR 350.5(a) which states:

> Section 50.47 of [the Nuclear Regulatory Commission's] Emergency Planning Rule [10 CFR Parts 50 [Appendix E] and 70 as amended and the joint FEMA-Nuclear Regulatory Commission *Criteria for Preparation and Evaluation of Radiological Response Plants and Preparedness In Support of Nuclear Power Plants* (NUREG–0654/FEMA REP–1, Rev 1 November, 1980) * * * are to be used in reviewing, evaluating and approving State and local radiological emergency plans and preparedness and in making any findings and determinations with respect to the adequacy of the plans and the capabilities of state and local government to implement them. Both the planning and preparedness standards and related criteria contained in NUREG–0654/FEMA REP–1, Rev. 1 are to be used by FEMA and the [Nuclear Regulatory Commission] in reviewing and evaluating State and local government radiological emergency plans and preparedness.[4]

Planning Standard N of NUREG–0654/FEMA REP 1, Rev. 1 addresses the conduct of exercises. The Planning Standard states that ''Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities * * * and deficiencies identified as a result of exercises * * * are (will be) corrected.'' Evaluation criterion 1.a defines an exercise as ''an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.''

The Planning Standard N criteria contain several requirements for exercises. All exercises must simulate an emergency that results in offsite radiological emergency releases, which would require response by offsite authorities. Scenarios should be varied from year to year and conducted under various weather conditions; some exercises or drills should be unannounced.[5] In other respects, the Planning Standard N criteria contemplate that exercises will be conducted as set forth in Nuclear Regulatory Commission and FEMA rules and in exercise evaluation guidance.[6]

In September 1991, FEMA published the current exercise evaluation guidance, which is REP–14. REP–14

[1] FEMA is planning to consolidate REP–14 into a new reference book. The contents of REP–14, including any changes resulting from final action on the issues discussed in this notice, will be incorporated into this new reference book. At this time, we are proposing to revise not withdraw REP–14. We expect to formally withdraw REP–14 when the new reference book is available.

[2] Adoption of the proposed Evaluation Criteria will also render much of § C.2 of REP–14 obsolete. Pages C.2–3 and C.2–4 of REP–14 speak to the frequency with which particular REP–14 objectives will be exercised. FEMA proposes to adopt the Federal Exercise Evaluation Matrix, which appears later in this document as Table 2 in place of the exercise objective groupings which appear on Pages C.2–3 and C–2.4 of REP–14.

[3] The preamble to 44 CFR part 350 is published at 48 FR 44332 (September 28, 1983).

[4] *See also*, 44 CFR 350.13(a) which states in relevant part ''The basis upon which [FEMA] makes the determination for withdrawal of approval [of a State or local radiological emergency plan] is the same basis used in reviewing plans and exercises, i.e. the planning standards and related criteria in NUREG 0654/FEMA REP–1, Rev. 1.''

[5] *See,* Planning Standard N, evaluation criteria 1.a and 1.b

[6] *See*, Planning Standard N, evaluation criteria 1.a (rules) and 3 (exercise evaluation guidance).

established a series of 33 objectives (REP–14 Objectives) that interpret and apply the guidance contained in NUREG–0654/FEMA REP–1, Rev. 1. A companion document, REP–15 contained a series of forms and checklists keyed to the 33 REP–14 Objectives for use by exercise evaluators in documenting performance. FEMA circulated both documents for public comment.[7]

REP–14 also established the frequency with which each of the objectives would be demonstrated in exercises. The 33 REP–14 Objectives were divided into three groups. Thirteen objectives in the first group would need to be demonstrated in every exercise. Nine objectives in the second group should be demonstrated in every exercise by some but not all responding organizations as the scenario dictates, provided that all responding organizations must demonstrate the objective once every six years. Another eleven objectives must be demonstrated once every six years.[8]

Strategic Review Process

In June 1996, the Director of the Federal Emergency Management Agency initiated a strategic review of the REP Program. This review was announced in the **Federal Register** in June 1996 and suggestions for improvement in the REP Program were solicited from the public. The respondents raised 180 issues. Seventy comments specifically addressed the conduct of exercises. Many commenters suggested that FEMA make exercise evaluation criteria outcome-based and less prescriptive. These commenters, representing States, local governments, and industry, suggested that evaluations should stress successful completion of basic health and safety objectives, with the specifics of accomplishing this left up to the OROs.

The comments were turned over to a Strategic Review Steering Committee for review.[9] Due to the large number of comments received on the conduct of exercises, the Strategic Review Steering Committee commissioned a concept paper on exercise streamlining. The concept paper was released to the public[10] and comments were received at stakeholder meetings in St. Louis, San Francisco and Washington DC in 1997.[11]

The concept paper identified several key issues for further consideration.

- REP–14 and REP–15 should be revised to support a ''results oriented'' exercise evaluation process.
- REP exercises should concentrate on radiological issues.
- REP–14 and REP–15 could be streamlined by combining similar objectives and points of review without harming the evaluation process.
- REP–14 and REP–15 are out of date due to changes in federal regulations, guidance and terminology.
- The required demonstration frequency of objectives should be reevaluated. Some objectives should be demonstrated more frequently and others less frequently.[12]

On September 9, 1998, FEMA published the draft final recommendations of the Strategic Review Steering Committee for public comment. Recommendation 1.1 addressed the 33 REP–14 Objectives. The Strategic Review Steering Committee noted:

> Exercises are currently evaluated in an ''objective based format.'' * * * This system is very structured and leaves little latitude for satisfying the objective by alternate means. Stakeholders have identified the obvious similarities between objectives. Experience in exercise evaluations indicates that several objectives can easily be combined, and others deleted, without weakening the evaluation process. * * * [We recommend] the consolidation of current objectives into * * * six Evaluation Areas * * * These Evaluation Areas would be established to support a ''results oriented'' evaluation process. Results oriented evaluation allows FEMA to focus on the outcome of actions taken by players in the implementation of their plans and procedures. This approach will give the exercise players more latitude to reach the desired results. Evaluators would then concentrate on the results of an exercise activity, not on the steps taken to arrive at a result. Within each Evaluation Area, objectives would be combined and duplicative Points of Review would be eliminated.'' [13]

The Strategic Review Steering Committee recommended the consolidation of 29 of the 33 REP–14 Exercise Objective into six Exercise Evaluation Areas with sub-criteria. It also recommended the elimination of four of the REP–14 Objectives.[14]

Recommendation 1.2 addressed the frequency of demonstrations. The frequency for exercising each of the evaluation areas and sub criteria was set out in a table which accompanied Recommendation 1.2.[15]

Respondents to FEMA's request for public comment generally favored Recommendations 1.1 and 1.2.[16] On March

[7] On March 27, 1991, FEMA noticed the availability for REP–14 and REP–15 for public comment in the **Federal Register** [56 FR 12734]. It responded to public comments in a third publication, REP–18. *See*, 57 FR 4880 (February 10, 1992) corrected by 57 FR 10956 (March 31, 1992).

[8] *See*, REP–14, pages C–2.3 to C–2.4.

[9] The Strategic Review Steering Committee was composed of federal employees from FEMA headquarters, FEMA regional offices and the Nuclear Regulatory Commission.

[10] The concept paper can be reviewed at *http://www.fema.gov/pte/rep/exercise.htm* (viewed on May 22, 2001).

[11] The transcripts of the three public meetings can be reviewed at *http://www.fema.gov/pte/rep/trans.htm* (viewed on May 22, 2001).

[12] FEMA is proposing to address each of these issues through the changes described in this notice. Other issues identified in the concept paper will not be addressed through this notice. The concept paper observed that some aspects of radiological emergency preparedness can be demonstrated separate and apart from the exercise. It suggested that FEMA should provide guidance on when ''out of sequence'' demonstrations are permissible. FEMA has issued a policy statement on this issue which was made effective October 1, 1999. The policy statement may be viewed at *http://www.fema.gov/pte/rep/fnlpl-3.htm* (viewed May 30, 2001). The concept paper also observed that some aspects of radiological emergency preparedness are satisfactorily demonstrated by actual responses to disasters and emergencies or through other exercises in which OROs participate and credit should be given for demonstrated performance outside of a REP exercise. FEMA is still considering this issue. The concept paper suggested that FEMA should explore alternative approaches to evaluating emergency preparedness in addition to exercises. For example, it is suggested that maintenance and calibration of equipment that must be maintained under a radiological emergency response plan, can and should be verified separate and apart from an exercise. FEMA currently requires that OROs certify that various aspects of the radiological emergency response plans are functional through an ''Annual Letter of Certification.'' FEMA reserves the right to audit an ORO's representations in the Annual Letter of Certification. Some of the evaluation criteria contained in NUREG–0654/FEMA REP–1, Rev. 1 will not be exercised under the proposed Exercise Evaluation Areas described in this notice. This is because these criteria are most appropriately verified, in FEMA's judgment, through the Annual Letter of Certification and audits pursuant thereto. The concept paper recommended that FEMA expand its program of staff assistance visits to regularly provide feedback on emergency preparedness issues. FEMA is expanding this program.

[13] 63 Fed. Reg. 48225 (September 9, 1998).

[14] These were REP–14 Objectives 23, 31, 32 and 33. FEMA is proposing to eliminate REP–14 Objectives 23 and 31 in their entirety. Objective 23 tested the ORO's ability to identify and utilize federal and voluntary agency resources. FEMA plans to take lead responsibility for identifying available federal resources. The decision on whether to use these resources belongs to the ORO. A determination of whether the ORO is effectively utilizing voluntary agency resources is more appropriately made in reviewing the ORO's plans. Objective 31 tested the ORO's ability to evacuate non-essential personnel from the nuclear power plant site. We have concluded that the emergency preparedness benefit of evaluating this capability separate and apart from the capability to evacuate members of the general public is negligible. However, Objectives 32 (demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill) and 33 (demonstrate the capability to carry out emergency response functions during an off-hours drill or exercise) are not proposed for elimination. These REP–14 Objectives would be folded into Exercise Evaluation Area 5.a.2, which provides for an unannounced drill of an incident requiring urgent response action by ORO's (also known as a ''fast breaker''). The drill may occur during off-hours.

[15] 63 Fed. Reg. 58226–58227 (September 9, 1998).

[16] A compilation of comments and the Strategic Review Steering Committee's response appears on

Continued

25, 1999, the strategic review recommendations, including Recommendations 1.1 and 1.2 were turned over to the REP Program by Kay C. Goss, CEM, Associate Director for Preparedness, Training and Exercises for further consideration. This notice addresses the proposed implementation of Recommendations 1.1 and 1.2.

Implementation of Strategic Review Steering Committee Recommendation 1.1

FEMA proposes to implement Recommendation 1.1 through adoption of the Exercise Evaluation Areas described in this notice. Two drafts of the Exercise Evaluation Area have already been released for public comment on the REP website. The first draft was released in November 1999. These comments and responses from the drafting group have been placed on the REP website.[17] A second draft was released in March 2000.[18]

During the fall of 2000, FEMA conducted pilot tests of the six draft Exercise Evaluation Areas at four nuclear power plants in different FEMA regions. A Pilot Evaluation Team, comprised of REP Regional Assistance Committee Chairs and FEMA headquarters REP staff, observed and assessed the pilot exercises. The team was instructed to identify any evaluation areas that needed revision. It was also asked to consider whether the new evaluation methodology provided an equal if not more robust review of State and local emergency response plans and procedures than the objective ''checklist approach.''

The conclusions drawn by the Pilot Evaluation Team are consistent with the comments FEMA has received since the inception of the strategic review process. Based upon these comments and reports from the Pilot Evaluation Team, FEMA has concluded:

- The current REP–14 and REP–15 evaluation methodology resulted in predictable exercises, judged against checklists; exercises under the proposed criteria will be based on emergency response plans, not the checklists, and should facilitate better coordination, communication, decisionmaking and implementation.
- Utilization of the new methodology will facilitate the introduction of more challenging scenarios geared to the particular community being evaluated. It will reduce the artificiality of exercises and more closely replicate responses to real incidents.
- The proposed methodology, which focuses on results, will increase ORO enthusiasm for exercise participation and substantially reduce the perception that the evaluators are nit-picking performance.
- The proposed methodology is more demanding on evaluators than the current checklists. It requires that they explain in narrative form what was observed and whether performance was adequate. This will result in more effective communication between evaluators and OROs about exercise issues and plan shortcomings. It will also provide the REP Program with better data from which to draw conclusions about emergency preparedness on a national level.
- Emergency preparedness can be significantly enhanced through better focused exercise evaluation criteria, coupled with FEMA's renewed emphasis on the Annual Letter of Certification and more frequent staff assistance visits.

Highlights of the Proposed Exercise Evaluation Areas

Evaluation Area 1—Emergency Operations Management

Evaluation Area 1 has five sub-elements: (a) mobilization, (b) facilities, (c) direction and control, (d) communications equipment and (e) equipment and supplies to support operations.

Criterion 1.a.1 requires that the OROs use effective procedures to alert, notify and mobilize emergency personnel and activate facilities in a timely manner. One of the more difficult issues to arise from the strategic review is how OROs demonstrate their twenty-four hour staffing capability in an exercise. The evaluation criteria associated with Planning Standard ''A'' of NUREG–0654/FEMA REP–1, Rev. 1 require that ''each principal organization shall be capable of continuous (twenty-four-hour) operations for a protracted period.'' [19] These criteria also require that each State and local response organization be capable of twenty-four-hour emergency response.[20]

REP–14 Objective 30.1, which implements these criteria, presently requires all agencies responsible for providing twenty-four-hour staffing demonstrate a shift change once every six years. The shift change is demonstrated by providing a ''one-for-one replacement . . . of key staff responsible for communications, direction and control of operations, alert and notification for the public and the media, radiological monitoring, protective response and medical and public health support.'' [21]

REP–14 Objective 30.2 requires that outgoing staff members should demonstrate their capability to brief their replacements on the current status of the simulated emergency. The purpose of this demonstration is to assure that the transition from the outgoing to incoming shift is accomplished without discontinuity in operations.

The dissatisfaction within the REP community about Objective 30 seems to stem from time constraints associated with the exercise. OROs will bring a second shift (often composed of volunteers who must take time away from other responsibilities) in for the exercise, only to discover that there is little time left in the exercise for the second shift to actually demonstrate their capabilities.

FEMA is sympathetic to the dissatisfaction with the present approach. However, we are equally uneasy about simply eliminating the shift change requirement. NUREG–0654/FEMA REP–1, Rev. 1, requires that we verify that response organizations have sufficient trained people in the key positions to perform twenty-four-hour operations. Moreover, we are concerned that our present approach offers those on the second and the third shift little opportunity to train for a real emergency through exercise participation.

Our proposed criterion 1.a.1 eliminates the requirement that OROs demonstrate a shift change once every six years. In order to assure that OROs have sufficient staffing to support twenty-four hour operations, we propose that the exercise evaluators inspect the procedures for twenty-four hour staffing at each facility and a staff roster to determine whether the response organization has identified the necessary personnel to carry out critical functions. These critical functions are the same functions named in REP–14 Objective 30.1. The inspection would occur during each exercise.[22] This approach is consistent with Planning Standard ''A'' of NUREG–0654/FEMA REP–1, Rev. 1. and its associated criteria. Neither requires the demonstration of a shift change.

However our consideration of the shift change issue leaves us mindful of the need to assure that key personnel on the off-hours shifts can perform as well as the primary responders. Without an opportunity to observe the performance of these personnel in an exercise, we are uncertain about whether the key personnel on the off-hours shifts can perform up to the standard that those who regularly exercise do. Moreover, we are concerned that our present exercise approach denies those in key positions on off-hours shifts an opportunity to train through meaningful exercise participation.

For this reason, FEMA is inclined to require that OROs demonstrate their twenty-four hour response capability by alternating the personnel that participate in the biennial exercises from among the shifts.[23] For example, the first biennial exercise of each six year cycle might involve personnel from the first twelve-hour shift. The second biennial exercise in the six year cycle would involve personnel from the second twelve-hour shift. The third biennial exercise in the six year cycle would involve personnel from the third shift (if the ORO uses three shifts in its plan) or the first shift (if the ORO uses two shifts in its plan) This would provide an opportunity for the key personnel on all shifts to have an opportunity to train by participating in an exercise as well as an opportunity for FEMA to evaluate the performance of all of the individuals who will play key roles in an actual response.

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the REP Internet site, *http://www.fema.gov/pte/rep/finalrecc10 99.doc* (visited May 22, 2001).

[17] *http://www.fema.gov/pte/rep/comments.doc* (viewed May 22, 2001).

[18] *http://www.fema.gov/pte/rep/recini.htm* (viewed May 22, 2001).

[19] Planning Standard A, evaluation criterion A.4.

[20] Planning Standard A, evaluation criterion A.1.e

[21] REP–14 page D.30–1

[22] Additional assurance that OROs have sufficient trained personnel to support twenty-four-hour response and operations is contained in the Annual Letter of Certification. FEMA may audit the ORO's representations in the Annual Letter of Certification.

[23] We define key positions in this proposal in the same way that they are defined in REP–14 Objective 30.1, i.e. communications, direction and control of operations, alert and notification of the public, accident assessment, information for the public and the media, radiological monitoring, protective response, and medical and public health support functions.

We recognize that a limited number of key personnel, such as a county Emergency Management Director, intend to remain involved in an actual emergency response on a twenty-four-hour basis until the incident is resolved. We are prepared to accommodate the participation of these individuals in every exercise, but expect that each will have their designated successor participate in the exercise. An exercise scenario might provide that a county Emergency Management Director is unable to perform his or her duties and an alternate must step in to take over the operation.

FEMA believes it is crucial for all personnel expected to perform key roles in a radiological emergency response to exercise in their roles. However, we are not prepared to move forward with a definitive plan to achieve this objective without your comments. If you do not agree with the proposal described above, we would appreciate your identification of alternative means through which FEMA can assure that the key personnel who are expected to work the off-hours shifts are as well trained as those who work the shift that most often exercises. We are interested in your comments about whether FEMA needs to make any changes in the way it conducts exercises, i.e. commencing exercises on weekends, holidays or off-hours, to facilitate participation from those who would serve on the off-hours shifts in the event of an actual emergency. We also seek your views on whether or not this proposal will result in a net benefit to emergency preparedness.

Our review of the issues associated with the shift change also leads us to believe that the briefing required by Objective 30.2, which presently needs to be demonstrated only once every six years, should be demonstrated at every exercise in the future. This provision has been written into proposed criterion 1.a.1. We propose to give OROs the option of bringing in a second shift of key responders to receive the briefing or to provide the briefing to the evaluators.

Criterion 1.b.1 requires that the ORO demonstrate that its facilities are sufficient to support the emergency response. Under the proposed exercise methodology, facilities will only be evaluated if they are new or have substantial changes in structure or mission. It seems redundant to require the re-evaluation of a facility every two years if the facility has not changed. This change does not affect the current requirement that OROs certify in the Annual Letter of Certification that their facilities are available and adequate to meet emergency response needs. FEMA reserves the right to audit the representations made in the Annual Letter of Certification.

Criterion 1.c.1 requires that key personnel with leadership roles for the ORO provide direction and control to that part of the overall response for which they are responsible. This requirement is identical to that in Objective 3.1 [24] of REP–14.

Criterion 1.d requires that communications capabilities are managed in support of emergency operations with communication links established and maintained with appropriate locations. The proper functioning of communications equipment is essential to success in any exercise, just as it is essential to success in any response. FEMA expects that both the primary and backup communications systems, which are required by Planning Standard F, Evaluation Criteria F.1 of NUREG–0654/FEMA REP–1 Rev. 1, will be fully functional at the commencement of an exercise. Under REP–14 the functionality of these systems were tested at each exercise. Consistent with the spirit of the proposed Exercise Evaluation Areas, FEMA will not verify that the primary and backup communications systems are operational as a stand-alone evaluation item. However, we will craft exercise scenarios which call for the use of the primary system and scenarios which assume the failure of the primary system and require the use of the backup system. The ORO will not know prior to the start of the exercise whether one or both systems will be tested as part of the scenario. While an ORO may not be penalized if a communications system fails, so long as the other is operational, FEMA will take note of all communications system failures. They will be reported to Director of the REP Program and to the appropriate FEMA Regional Director and Regional Assistance Committee Chair as a planning issue.[25] The ORO is expected to correct any communication systems failure within 60 days of the conclusion of the exercise.

Criterion 1.e requires that equipment, dosimetry, supplies of potassium iodide and other required supplies are sufficient to support emergency operations. The requirements are similar to those in REP–14 Objectives 2.1, 5.1, 8.2 and 14.2. FEMA may or may not verify that these items are available and in good repair as a stand-alone item in every exercise. However, our exercise scenarios ordinarily require that the equipment and supplies be put to use. If equipment and supplies are unavailable or non-functional then the ORO may not be able to perform the emergency response activity at an acceptable level. Equipment and supplies that are not checked during an exercise will be checked during a staff assistance visit. Additional assurance that equipment and supplies are available in appropriate quantities and are properly maintained will be obtained in the Annual Letter of Certification. The representations contained in the Annual Letter of Certification are subject to audit.

Evaluation Area 2—Protective Action Decisionmaking

Evaluation Area 2 assesses the ORO's ability to render decisions about what protective actions members of the public and emergency workers need to take in the wake of an incident. It has five sub-elements: emergency worker exposure control, radiological assessment and protective action recommendations and decisions for the plume phase of the emergency,[26] protective action decision considerations for the protection of special populations, radiological assessment and decisionmaking for the ingestion pathway exposure[27] and radiological assessment and decisionmaking concerning relocation, re-entry and return.

The criteria in Evaluation Area 2 are generally similar to those in REP–14. We believe that proposed criterion 2.e.1 improves upon REP–14 Objectives 28.1 and 28.3 by eliminating the cumbersome standard and optional approaches to re-entry and relocation decisionmaking in REP–14. Criterion 2.e.1 contains a single approach to evaluating decisions in these areas

Evaluation Area 3—Protective Action Implementation

Evaluation Area 3 assesses the ORO's ability to implement protective actions, including evacuation. It contains six sub-elements: implementation of emergency worker exposure control, implementation of potassium iodide decisions, implementation of protective actions for special populations, implementation of traffic and access control, implementation of ingestion pathway decisions and implementation of relocation, re-entry and return decisions.

Criterion 3.a.1 requires that emergency workers demonstrate their ability to read dosimetry and understand the protective actions that they must take in response to specified levels. This requirement is similar to Objectives 5.1 and 5.2 in REP–14. Under the former evaluation methodology, emergency workers were subjected to the equivalent of a ''closed book examination'' on these matters. The proposed methodology makes it clear that emergency workers can refer to published procedures and confer with co-workers in responding to evaluator inquiries, just as they would, if necessary, in a real incident.

Criterion 3.b.1 tests the capability to distribute potassium iodide and appropriately instruct recipients on its use, in accordance with the ORO's emergency response plan. Potassium iodide is a non-prescription thyroid-blocking agent, which has been found effective in preventing thyroid cancer in those exposed to radiation during a nuclear plant incident. Criterion 3.b.1 also requires OROs to demonstrate their ability to maintain records on the administration of potassium iodide. Criterion 3.b.1 does not require that potassium iodide actually be administered. It requires only that OROs be able to demonstrate the functionality of this aspect of the plan.

Criterion 3.c.1 evaluates the protective action decisions that are implemented for special populations other than schools within areas subject to protective actions. OROs must demonstrate a capability to alert and notify special populations, transportation providers (including special resources for people with disabilities), and

[24] References to the REP–14 Objectives will appear in this form throughout this notice. REP–14 Objective 3.1 is Objective 3, Criterion 1.

[25] See, pages B.12 and B.21 of the Federal Emergency Management Agency, Radiological Emergency Preparedness Program, Standard Exercise Report Format (October 1995).

[26] The plume phase of the emergency focuses on preventing exposure of a population to radiation through direct contact with the plume.

[27] The ingestion pathway phase focuses on preventing exposure of a population to radiation through ingestion of foods that may have been exposed to radiation.

establish reception facilities. The availability of resources to transport special populations out of the plume exposure pathway is key. For this reason, proposed criterion 3.c.1 requires that OROs actually contact at least ⅓ of their transportation providers during each exercise to determine whether buses and drivers would be available if the exercise were an actual emergency.

Criterion 3.c.2 evaluates the capability to implement protective action decisions for schools. The proposed criterion requires that OROs contact each public school system, licensed day care provider and participating private school which would be required to implement a protective action decision if the exercise scenario were an actual emergency. Simulation of these calls is not allowed.

REP–14 Objective 16.2 presently requires that a single school bus be mobilized to drive an evacuation route as part of an exercise. FEMA does not believe that this demonstration achieves any significant emergency preparedness objective and is proposing to delete it. We do reserve the right to interview bus drivers to determine their familiarity with evacuation routes.

Criterion 3.d.1 evaluates the capability to establish and maintain appropriate traffic control and access points. REP–14 Objective 17.2 requires an actual deployment to test staffing capabilities. The proposed new criterion would not require an actual deployment. Capability could be established through an evaluative interview with appropriate public safety personnel. The decision to no longer require actual deployment stems from the recognition that public safety agencies regularly establish traffic and access control points in response to non-radiological incidents. The new criterion does not deprive FEMA of the ability to request a demonstration of actual deployment capability where appropriate. It simply establishes that actual deployment will not be required as a matter of course.

Criterion 3.d.2 evaluates the capability to remove impediments to evacuation. REP–14 Objective 17.4 required that actual telephone calls be placed to resources which might assist in removing the impediments, e.g., tow truck contractors. However, REP–14 did not require that tow trucks actually respond and remove the impediments. While there is some value in determining whether OROs maintain an accurate list of telephone numbers, it is not necessary to mandate regular testing of the ability to telephone a tow operator. The tow operators that might be relied upon in a nuclear power plant incident are similar to those who might be called upon in a traffic accident. Emergency dispatchers can reasonably be presumed to know how to contact tow operators.

Criterion 3.e.1 tests the availability and appropriate use of adequate information regarding water, food supplies, milk and agricultural production within the ingestion exposure pathway zone for implementation of protective actions. REP–14 Objective 27.1 requires that various maps and information sources required by Planning Standard J of NUREG–0654/REP–1 Rev 1 be available. The proposed criterion does not change the requirement that these information sources be available. However, it does not require that an evaluator specifically check off that they are present. Ingestion pathway exercises will be evaluated based upon whether OROs effectively use the information that must be available in addressing the exercise scenario. If the information is not available, OROs may not be able to meet the new ''results oriented'' criterion.

Criterion 3.e.2 evaluates measures, strategies and pre-printed instructional material for implementing protective action decisions for contaminated water, food products, milk and agricultural production. REP 14 Objective 11.4 requires that evaluators check off whether a distribution list is maintained and Objective 27.3 contains specific instructions on how implementation of ingestion pathway decisions should be evaluated. Through its level of detail, REP–14 established a single correct way to implement ingestion pathway decisions, notwithstanding that alternative approaches would also adequately protect public health and safety. FEMA believes that it is appropriate to give OROs the flexibility to implement ingestion pathway decisions in a way that they deem prudent. OROs will be evaluated on the basis of whether their decisions adequately protect public health and safety.

Criterion 3.f evaluates decisions regarding controlled re-entry of emergency workers and relocation and return. This criterion consolidates REP–14 Objectives 29.1, 29.2, 29.3 and 29.4.

Evaluation Area 4—Field Measurement and Analysis

Evaluation Area 4 assesses the ability of OROs to conduct and analyze field radiation measurements. It has three sub-elements: plume phase field measurement and analysis, post plume phase field measurements and sampling, and laboratory operations. The evaluation criteria are similar to those that appear in REP–14. The proposed evaluation criterion encourages OROs to utilize resources offered by federal agencies, where appropriate.

Evaluation Area 5—Emergency Notification and Public Information

Evaluation Area 5 looks at the ORO's ability to notify the public of an incident and to effectively communicate protective action recommendations. It contains two sub-elements: activation of the prompt alert and notification system and emergency information and instructions for the public and the media.

Proposed criteria 5.a.1, 5.a.2 and 5.a.3 address activation of the prompt alert and notification system. We believe that the proposed criteria represent a significant improvement in exercise methodology over REP–14. Plume exposure exercises under the REP–14 methodology have followed a familiar pattern—they all involved a scenario that incrementally escalates from a situation requiring no action by the public to a situation requiring urgent action by the public. The REP–14 methodology did not test the ability of ORO decisionmakers to reach a decision on activating the prompt alert and notification system in an atmosphere of uncertainty. The scenario left no discretion to the decisionmakers.

Proposed criteria 5.a.1 and 5.a.2 remedy this artificiality by requiring that alert and notification decisionmaking be tested under two different scenarios—one in which urgent action is not immediately required and one in which it is. Proposed criterion 5.a.1 addresses the situation in which urgent action by the public is not immediately required. Proposed criterion 5.a.2 addresses the situation in which urgent action by the public is immediately required due to quickly deteriorating conditions at the plant. This second scenario is known as the ''fast breaker.''

Proposed criterion 5.a.1 requires that the alert and notification system be activated in a timely manner following notification to the ORO by the nuclear power plant of an incident that requires activation of the alert and notification system but does not immediately require urgent action by the public. Whether decisionmakers initiate the alert and notification system in a ''timely manner'' will be judged in relation to the scenario. We will also evaluate the quality of the public notification.

Proposed criterion 5.a.2 requires that activities associated with the alert and notification system in a ''fast breaker'' situation must be completed within fifteen minutes of the time that the ORO has received verified notification from the nuclear power plant of a situation that immediately requires urgent public action. The fifteen-minute requirement derives from Nuclear Regulatory Commission regulations which appear at 10 CFR 50.47, Appendix E.IV.D. Since fast breaking situations are by their nature unpredictable, FEMA proposes to evaluate the ''fast breaker'' response in an unannounced drill, separate and apart from regular exercises. OROs will be notified of the week in which the drill will occur, but not the specific day or time. The ''fast breaker'' drill can occur during off-hours. In formulating criteria 5.a.1 and 5.a.2, FEMA considered comments made at ''fast breaker workshops'' during the April 2000 National Radiological Emergency Preparedness Conference [28] as well as comments submitted in the strategic review. We are especially interested in receiving written comments on proposed criteria 5.a.1 and 5.a.2 from those interested in ''fast breaker'' issues.

Proposed criteria 5.a.1 and 5.a.2 do not address what information must be contained in an initial instructional memorandum to the public. Under current FEMA guidance, [29] an initial instructional message must contain five elements at a minimum. These five elements include a coded ''Emergency

[28] The National Radiological Preparedness Conference is an annual meeting of individuals with an interest in radiological emergency preparedness. The conference is sponsored by an independent non-profit organization and is open to the public.

[29] The current guidance entitled ''Radiological Emergency Preparedness (REP) Guidance To Support Implementation of the Emergency Alert System (EAS)'' dated February 2, 1999 can be viewed at *http://www.fema.gov/pte/rep/easrep.htm* (viewed May 31, 2001). The guidance is contained in Attachment ''B'' to the memorandum entitled ''Background on the Emergency Alert System (EAS).''

Classification Level'' [30] and a protective action recommendation. Concerns have been expressed in the strategic review process that disclosure of an Emergency Classification Level in an initial message does not provide the public with useful information. Serious questions have been raised about when a protective action recommendation must be made, particularly if evacuation routes need to be cleared and reception facilities need to be opened to support a safe and orderly evacuation. For these reasons, FEMA is requesting comments in a notice, which appears in the same edition of the **Federal Register** as this one about whether its current guidance should be changed. We hope to complete our review of this guidance contemporaneously with our decision on whether to implement the proposed Exercise Evaluation Areas so that any changes concerning the content of initial messages can be incorporated into criteria 5.a.1 and 5.a.2.

Proposed criterion 5.a.3 addresses notification of people living in very remote areas, also known as ''exception areas,'' who are not reached by alert sirens or tone alert radios. People who reside in exception areas are notified of an incident by mobile teams called ''backup route alerting teams.'' Proposed criterion 5.a.3 is similar to the REP–14 criterion with respect to notification of people in ''exception areas.''

Proposed criterion 5.a.3 also addresses backup alerting and notification of the general public in the event of a failure in the primary alert and notification system. Criterion 5.a.3 requires that the completion of backup alerting and notification within 45 minutes of the decision by offsite emergency officials to notify the public of an emergency situation. REP–14 required completion of the notification within ''approximately'' 45 minutes after the decision. The proposed criterion more closely conforms to the requirement set forth in Appendix 3 to NUREG–0654/FEMA REP–1, Rev. 1.

Proposed criterion 5.b.1 tests whether OROs provide accurate emergency information and instructions to the public and the news media in a timely fashion. While FEMA is considering whether technical information such as Emergency Classification Levels should be included in alert and notification system messages, it believes that this information should be made available to the news media with a plain Language explanation. The ORO should be prepared to explain the Emergency Classification Level and related technical information in plain Language during an exercise.

Evaluation Area 6: Support Operations/ Facilities

Evaluation Area 6 assesses the ability of OROs to account for, monitor and decontaminate evacuees, emergency workers, and emergency worker equipment, to provide temporary care of evacuees and to assure that capabilities exist for transporting and treating injured individuals who have been exposed to radiation. These competencies are tested in the four sub-elements associated with Evaluation Area 6. The proposed Criteria are consistent with REP–14. While REP–14 establishes a series of prescriptive procedures that must be followed by the ORO, the proposed criteria describe the result which must be obtained, without instructing the ORO on how to obtain it.

TABLE 1.—COMPARISON OF PROPOSED EVALUATION AREAS WITH NUREG–0654/FEMA REP–1, REV. 1 PLANNING CRITERIA AND REP 14/15 OBJECTIVES AND CRITERIA

Evaluation area/Sub-element/Criterion	NUREG 0654 Criteria	REP–14/15 Objective and Criterion
1—Emergency Operations Management		1, 2, 3, 4, 5, 8, 14, 30
1.a—Mobilization		
1.a.1: OROs use effective proceduresto alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.	A.4; D.3, 4; E.1, 2; H.4	1.1, 1.2; 30
1.b—Facilities		
1.b.1: Facilities are sufficient to support the emergency response	H.3	2.1
1.c—Direction and Control		
1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.	A.1.d; A.2.a, b	3.1
1.d—Communications Equipment		
1.d.1: At least two communication systems are available and at least one operates properly, and communication links are established with appropriate locations. Communications capabilities are managed in support of emergency operations.	F.1, 2	4.1
1.e—Equipment and Supplies to Support Operations		
1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.	H.7; J.10.a, b, e, J.11; K.3.a.	2.1; 5.1; 8.2; 14.2
2—Protective Action Decision Making		5, 7, 9, 14, 15, 16, 26, 28
2.a—Emergency Worker Exposure Control		
2.a.1: OROs use a decision making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides.	J.10.e, f; K.4	5.1, 5.3; 14.1
2.b—Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency		
2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions.	I.8,10; Supp. 3	7.1
2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy).	J.9; J.10.f, m	9.1; 14.1
2.c—Protective Action Decisions for the Protection of Special Populations		
2.c.1: Protective action decisions are made, as appropriate, for special population groups.	J.9; J.10.	9.1; 15.1

[30] Emergency Classification Levels are a standard way through which nuclear power plants communicate the severity of incidents with onsite and offsite responders and regulatory agencies. *See*, Planning Standard D, NUREG–0654/REP–1, Rev. 1.

TABLE 1.—COMPARISON OF PROPOSED EVALUATION AREAS WITH NUREG–0654/FEMA REP–1, REV. 1 PLANNING CRITERIA AND REP 14/15 OBJECTIVES AND CRITERIA—Continued

Evaluation area/Sub-element/Criterion	NUREG 0654 Criteria	REP–14/15 Objective and Criterion
2.d—Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway		
2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria.	J.11	26.1, 26.2
2.e—Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return		
2.e.1: Timely relocation re-entry, and return decisions are made and coordinated as appropriate, based on assessments of radiological conditions and criteria in the ORO's plan and/or procedures.	M.1	28.1, 28.2, 28.3, 28.4, 28.5
3. Protective Action Implementation		5, 11, 14, 15, 16, 17, 27, 29
3.a—Implementation of Emergency Worker Exposure Control		
3.a.1: The OROs issues appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart.	K.3.a, 3.b	5.1, 5.2
3.b—Implementation of KI Decision		
3.b.1: KI and appropriate instructions are made available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained.	J.10.e	14.1, 14.3
3.c—Implementation of Protective Actions for Special Populations		
3.c.1: Protective action decisions are implemented for special population groups within areas subject to protective actions.	J.10.c, d, g	15.1, 15.2
3.c.2: ORO/School officials decide upon and implement protective actions for schools.	J.10.c, d, g	16.1, 16.2, 16.3
3.d—Implementation of Traffic and Access Control		
3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access personnel.	J.10.g, j	17.1, 17.2, 17.3
3.d.2: Impediments to evacuation are identified and resolved	J.10.k	17.4
3.e—Implementation of Ingestion Pathway Decisions		
3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions.	J.9,11	27.1
3.e.2: Appropriate measures, strategies and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production.	E.; J.9,11	11.4; 27.2; 27.3
3.f—Implementation of Relocation, Re-entry, and Return Decisions		
3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented.	M.1, 3	29.1, 29.2, 29.3, 29.4
4—Field Measurement and Analysis		6, 8, 24, 25
4.a—Plume Phase Field Measurement and Analyses		
4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates.	H.10, I.8, 9	6.1; 8.1, 8.2
4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure.	I.8,11; J.10.a	6.3, 6.4
4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media.	I.9	6.4, 6,5; 8.3, 8.4, 8.5, 8.6
4.b—Post Plume Phase Field Measurements and Sampling		
4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making.	I.8; J.11	24.1
4.c—Laboratory Operations		
4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions.	C.3; J.11	25.1, 25.2
5—Emergency Notification and Public Information		10, 11, 12, 13
5.a—Activation of the Prompt Alert and Notification System		

TABLE 1.—COMPARISON OF PROPOSED EVALUATION AREAS WITH NUREG–0654/FEMA REP–1, REV. 1 PLANNING CRITERIA AND REP 14/15 OBJECTIVES AND CRITERIA—Continued

Evaluation area/Sub-element/Criterion	NUREG 0654 Criteria	REP–14/15 Objective and Criterion
5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum: (1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; (2) identification of the commercial nuclear power plant and a statement than an emergency situation exists at the plant; (3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and (4) a closing statement asking the affected and potentially affected population to stay tuned for additional information.	10 CFR Part 50, Appendix E; E.5, 6.	10.1
5.a.2: Activities associated with primary alerting and notification of the public are completed within 15 minutes of verified notification from the utility of an emergency situation requiring urgent action (fast-breaking situation). The initial instructional message to the public must include as a minimum: (1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; (2) identification of the commercial nuclear power plant and a statement than an emergency situation exists at the plant; (3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and (4) a closing statement asking the affected and potentially affected population to say tuned for additional information. In addition, the ORO must demonstrate the capability to contact, in a timely manner, an authorized offsite decision maker relative to the nature and severity of the event, in accordance with plans and procedures.	10 CFR Part 50, Appendix E; E.5, 6.	10.1
5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes of the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system.	Appendix 3: B.2.c; E.6	10.2, 10.3
5.b—Emergency Information and Instructions for the Public and the Media		
5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner.	E.5, 7; G.3.a; G.4.c	11.1, 11.2, 11.3; 12.1, 12.2; 13.1, 13.2
6—Support Operation/Facilities	.....	18, 19, 20, 21, 22
6.a—Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees		
6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers.	J.10.h; J.12; K.5.a, b	18.1, 18.2, 18.3, 18.4, 18.5; 22.1, 22.2
6.b—Monitoring and Decontamination of Emergency Worker Equipment		
6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles.	K.5.a, b	22.1; 22.3
6.c—Temporary Care of Evacuees		
6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities.	J.10.h; J.12	19.1, 19.2
6.d—Transportation and Treatment of Contaminated Injured Individuals		
6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring decontamination, and medical services to contaminated injured individuals.	F.2; H.10; K.5.a, b; L.1; L.4	20.1, 20.2, 20.3, 20.4, 20.5; 21.1, 21.2, 21.3, 21.4

Replacement of REP–15 With the Evaluation Module Form

Adoption of the proposed Exercise Evaluation Areas will render REP–15 which contains checklists keyed to the 33 REP–14 Objectives obsolete. FEMA plans to utilize new forms called ''Evaluation Modules'' in place of the REP–15 checklists. The Evaluation Modules will be keyed to the Exercise Evaluation Areas. A sample Evaluation Module appears below.

BILLING CODE 6718–06–P

SAMPLE EVALUATION MODULE

This is a sample of the REP exercise evaluation module for one evaluation area criterion.

EVALUATION AREA number and title

Sub-element number and title

Criterion number, description, and NUREG-0654 reference(s)

- Was this Criterion adequately demonstrated?
  YES_____ NO_____ N/A_____

  If **NO**, identify all exercise issues by addressing the elements listed on the attached **ISSUES FOR CRITERION** form.
  Remember, if there is no effect or potential effect, there is no exercise issue.

- **Reminder:** Provide a complete evaluator packet to the Team Leader with a written narrative summary, timeline of observations, and all forms and information used during the exercise. Cite outstanding performance where observed.

- The following **INTENT** and **EXTENT OF PLAY** information is provided for general reference only. Consult the site-specific extent of play agreement and your Team Leader for how it applies to your assigned location.

  INTENT

  Sub-element INTENT, as stated in the Evaluation Area

  EXTENT OF PLAY

  Criterion EXTENT OF PLAY, as stated in the Evaluation Area

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

NARRATIVE SUMMARY FOR CRITERION:

[Evaluator must write a narrative and insert it here]

ISSUES FOR CRITERION:

Address the following elements:

CONDITION (describe the inadequacy):

POSSIBLE CAUSE (what is responsible):

REFERENCE (cite the specific NUREG-0654 element, regulation, etc.):

EFFECT (what resulted, or could have resulted, from this issue):

RECOMMENDATION (how to correct it):

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Implementation of Strategic Review Steering Committee Recommendation 1.2

The REP–14 objectives are currently evaluated at the frequency described on Pages C–2.3 and C–2.4. Adoption of the proposed Exercise Evaluation Areas will render these pages obsolete. In Table 2 proposes the minimum frequency with each of the Exercise Evaluation Areas would be exercised. FEMA is open to ORO proposals to voluntarily exercise certain criteria more frequently than the minimums listed below.

TABLE 2.—FEDERAL EVALUATION PROCESS MATRIX

Proposed evaluation area and sub-elements	Consolidates REP–14 objective	Minimum frequency
1. Emergency Operations Management	1, 2, 3, 4, 5, 8, 14, 17, 30 ..	
a. Mobilization		Every Exercise.
b. Facilities		Once if new.[1]
c. Direction and Control		Every Exercise.
d. Communications Equipment		Every Exercise.
e. Equipment and Supplies to Support Operations		Every Exercise.
2. Protective Action Decisionmaking	5, 7, 9, 14, 15, 16, 26, 28 ..	
a. Emergency Worker Exposure Control		Every Exercise.
b. Radiological Assessment & Protective Action Recommendations & Decisions for the Plume Phase of theEmergency.		Every Exercise.
c. Protective Action Decisions for the Protection of Special Populations		Every Exercise.
d. Radiological Assessment & Decisionmaking for the Ingestion Exposure Pathway[2].		Once in 6 yrs.
e. Radiological Assessment & Decisionmaking Concerning Relocation, Re-entry, and Return[2].		Once in 6 yrs.
3. Protective Action Implementation	5, 11, 14, 15, 16, 17, 27, 29.	
a. Implementation of Emergency Worker Exposure Control		Every Exercise.
b. Implementation of KI Decision		Once in 6 yrs.
c. Implementation of Protective Actions for Special Populations		Once in 6 yrs.[3]
d. Implementation of Traffic and Access Control[4]		Every Exercise.
e. Implementation of Ingestion Pathway Decisions		Once in 6 yrs.
f. Implementation of Relocation, Re-entry, and Return Decisions		Once in 6 yrs.
4. Field Measurement and Analysis	6, 8, 24, 25	
a. Plume Phase Field Measurements & Analysis		Every Exercise.
b. Post Plume Phase Field Measurements and Sampling		Once in 6 yrs.
c. Laboratory Operations		Once in 6 yrs.
5. Emergency Notification and Public Information	10, 11, 12, 13	
a.1 Activation of the Prompt Alert and Notification System		Every Exercise.

TABLE 2.—FEDERAL EVALUATION PROCESS MATRIX—Continued

Proposed evaluation area and sub-elements	Consolidates REP–14 objective	Minimum frequency
a.2 Activation of the Prompt Alert and Notification System (Fast Breaking).	.....	Separate Drill once in 6 yrs.
a.3 Notification of exception areas and/or Back-up Alert and Notification System within 45 Minutes.	.....	Every Exercise—as needed.
b. Emergency Information & Instructions for the Public and the Media	.....	Every Exercise.
6. Support Operations/Facilities	18, 19, 20, 21, 22	
a. Monitoring & Decontamination of Evacuees and Emergency Workers & Registration of Evacuees.	.....	Once in 6 yrs.[3]
b. Monitoring & Decontamination of Emergency Worker Equipment[3]	.....	Once in 6 yrs.[3]
c. Temporary Care of Evacuees[5]	.....	Once in 6 yrs.[5]

[1] Will be evaluated if new or changed substantially.
[2] The plume phase and the post-plume phase (ingestion, relocation, re-entry and return) can be demonstrated separately.
[3] All facilities must be evaluated once during the six-year exercise cycle.
[4] Physical deployment of resources is not necessary.
[5] Facilities managed by the American Red Cross (ARC), under the ARC/FEMA Memorandum of Understanding, will be evaluated once when designated or when substantial changes occur; all other facilities not managed by the ARC must be evaluated once in the six-year exercise cycle.

Coordination With the Nuclear Regulatory Commission

FEMA conducts and evaluates exercises in part under authority of a Memorandum of Understanding with the Nuclear Regulatory Commission. The text of the current Memorandum of Understanding is published in Appendix A to 44 CFR Part 353 (2000 edition). Section E of the Memorandum of Understanding provides that each agency will provide an opportunity for the other agency to review and comment on emergency planning and preparedness guidance (including interpretations of agreed joint guidance) prior to adoption as formal agency guidance. FEMA has transmitted a copy of this document to the Nuclear Regulatory Commission and requested their comments no later than the date upon which the public comment period closes.

Evaluation Area 1—Emergency Operations Management

Sub-element 1.a—Mobilization

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG–0654, A.4; D.3, 4; E.1, 2; H.4)

Extent of Play. Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. At each facility, a roster and/or procedures indicating 24-hour staffing capability for key positions (those emergency personnel necessary to carry out critical functions), as indicated in the plan and/or procedures, should be provided to the evaluator. Although demonstration of a shift change is not required, each ORO shall demonstrate its ability to transition from an outgoing shift to an incoming shift without discontinuity in operations either by having personnel in key positions briefing the evaluators or their actual replacements on the current status of the simulated emergency. In addition, responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the extent of play agreement, at those facilities located beyond a normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.b—Facilities

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have facilities to support the emergency response.

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG–0654, H)

Extent of Play. Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

Facilities must be set up based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.c—Direction and Control

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the capability to control their overall response to an emergency.

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG–0654, A.1.d; A.2.a, b)

Extent of Play. Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.

All activities associated with direction and control must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.d—Communications Equipment

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should establish at least two reliable communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG–0654, F.1, 2)

Extent of Play. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise

messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system and uses a separate power source. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exist. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system.

All activities associated with the management of communications capabilities must be demonstrated based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.e—Equipment and Supplies to Support Operations

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have emergency equipment and supplies adequate to support the emergency response.

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG–0654, H., J.10.a, b, e, j, k; j.11; K.3.a)

Extent of Play. Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged.

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked at least once each calendar quarter and after each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the CDV–700 series or if there are no manufacturer's recommendations for a specific instrument). A label indicating such calibration should be on each instrument or verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimeters should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimeters should be inspected for electrical leakage at least annually and replaced, if necessary. CDV–138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, a letter from the drug manufacturer should be available that documents a formal extension of the KI expiration date. Another alternative is for the ORO to obtain approval from FEMA based on a certified independent laboratory testing to extend the shelf life.

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 2—Protective Action Decision-Making

Sub-Element 2.a—Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG–0654, which provides that an Offsite Response Organizations (ORO) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG–0654, K.4, J.10. e, f)

Extent of Play. OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate the following capabilities on the basis of information in the emergency plan: (1) Determination of radiation exposure limits to be authorized for emergency workers; (2) appropriate decision making, based on projected doses and in accordance with emergency workers' exposure limits, as to whether or not to send emergency workers to areas within the plume exposure pathway EPZ; (3) establishment of procedures to allow emergency workers to voluntarily choose to enter the plume exposure pathway EPZ where radiation levels may expose individuals to higher than pre-authorized exposures for lifesaving missions, to protect valuable property, or to protect large populations; and (4) use of a KI decision-making process that involves close coordination between appropriate assessment and decision-making staff.

Whenever emergency personnel are planning to undertake an operation, it is essential that the best estimate of the situation be known by the personnel directing the operation. All sources of information, including projected exposure rate patterns, should be considered and a best estimate made of the exposure likely to be received during a specific mission. The mission must be planned by taking into consideration the most likely situation as well as the most potentially hazardous situation. Items to be considered include alternative entry and exit routes, potential changes in meteorological conditions, areas or roads to be avoided, equipment and vehicle failure, and other relevant items.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to manage the number of emergency workers receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAGs for KI administration.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.b.—Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Intent

This sub-element is derived from NUREG–0654, which indicates that Offsite Response Organizations (ORO) have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of

protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400–R–92–001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions. (NUREG–0654, I.8, 10, 11 and Supplement 3)

Extent of Play. During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PAR) for decision-makers based on available information and recommendations from the licensee, and field monitoring data, if available.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAG to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PAD) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG–0654, J.9, 10.m)

Extent of Play. Offsite Response Organizations (ORO) should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.

Where specified in the plan and/or procedures, responsible OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.c—Protective Action Decisions Consideration for the Protection of Special Populations

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG–0654, J.9, J.10.c, d, e, g)

Extent of Play. Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are: weather conditions, shelter availability, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.d.—Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate PAGs, and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

During an accident at a nuclear power plant, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the accident, and depending on the nature of the release could impact the ingestion pathway for weeks or years.

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG–0654, I.8, 10; J.11)

Extent of Play. It is expected that the Offsite Response Organizations (ORO) will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's emergency classification levels (ECL). Such actions may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO should demonstrate timely decisions to minimize radiological impacts

from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and to the extent practical, coordinated with neighboring and local OROs.

OROs should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.e.—Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

Intent

The sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant.

Criterion 2.e.1: Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG–0654, A.1.b; I.10; M)

Extent of Play.

• *Relocation:* OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

• *Re-entry:* Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.

Examples of control procedures are: the assignment of, or checking for, direct-reading and non direct-reading dosimeters for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment; decision criteria regarding decontamination; and proper disposition of emergency worker dosimeters and maintenance of emergency worker radiation exposure records.

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decision making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events.

• *Return:* Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG. Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the emergency classification level and the relaxation of associated restrictive measures; basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Evaluation Area 3—Protective Action Implementation

Sub-Element 3.a—Implementation of Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG–0654, K.3)

Extent of Play. OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimetry chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g., written procedures and/or co-workers) in providing responses.

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimeter. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological

exposure commensurate with completing their missions.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 3.b—Implementation of KI Decision

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG–0654, E. 7, J. 10. e, f)

Extent of Play. Offsite Response Organizations (ORO) should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

Emergency workers should demonstrate the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. This can be accomplished by an interview with the evaluator.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 3.c—Implementation of Protective Actions for Special Populations

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special populations that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG–0654, E.7; J.9, 10.c, d, e, g)

Extent of Play. Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and reception facilities may be actual or simulated, as agreed to in the Extent of Play. At least ⅓ of transportation providers (including special resources for disabled individuals) must be actually contacted during each exercise. All actual and simulated contacts should be logged.

All implementing activities associated with protective actions for special populations must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG–0654, J.10.c, d, g)

Extent of Play. Applicable OROs should demonstrate the capability to alert and notify all public schools, licensed day care centers, and participating private schools within the emergency planning zone of emergency conditions that are expected to or may necessitate protective actions for students.

In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools and licensed day care centers should demonstrate the capability to make and implement prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

Officials of the participating school(s) or school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-Element 3.d.—Implementation of Traffic and Access Control

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG–0654, J.10.g, j, k)

Extent of Play. OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points, consistent with protective action decisions (for example, evacuating,sheltering, and relocation), in a timely manner. OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview in accordance with the extent of play agreement.

In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

All activities must be based on the ORO's plans and procedures and completed as they

would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG–0654, J.10.k)

Extent of Play. OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, should be logged.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-Element 3.e—Implementation of Ingestion Pathway Decisions

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions. NUREG–0654, J.9, 11)

Extent of Play. Applicable OROs should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.e.2: Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production. (NUREG–0654, E.5, 7; J.9, 11)

Extent of Play. Development of measures and strategies for implementation of IPZ protective actions should be demonstrated during exercise play by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate pre-printed information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 3.f—Implementation of Relocation, Re-entry, and Return Decisions

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG–0654, M.1, 3)

Extent of Play.

- *Relocation:* OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs.

Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.

- *Re-entry:* OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate.

Examples of control procedure subjects are: (1) The assignment of, or checking for, direct-reading and non-direct-reading dosimeters for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper disposition of emergency worker dosimeters, and maintenance of emergency worker radiation exposure records.

- *Return:* OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Communications among OROs for relocation, re-entry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 4—Field Measurement And Analysis

Sub-Element 4.a—Plume Phase Field Measurements and Analyses

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG–0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from

the field data. Adequate equipment and procedures are essential to such field measurement efforts.

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG–0654, H.10; I.7, 8, 9, 11)

Extent of Play. Field teams should be equipped with all instrumentation and supplies necessary to accomplish their mission. This should include instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure consistent with the intended use of the instrument and the ORO's plans and procedures, including radiological protection/exposure control of team members and detection of activity on the air sample collection media. An appropriate radioactive check source should be used to verify proper operational response for each low range radiation measurement instrument (less than 1 R/hr) and for high range instruments when available. If a source is not available for a high range instrument, a procedure should exist to operationally test the instrument before entering an area where only a high range instrument can make useful readings. All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG–0654, H.12; I.8, 11; J.10.a)

Extent of Play. Responsible Offsite Response Organizations (ORO) should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.

Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

If the responsibility to obtain peak measurements in the plume has been accepted by licensee field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. The sharing and coordination of plume measurement information among all field teams (licensee, Federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated. OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG–0654, I.7, 8, 9, 11)

Extent of Play. Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. Offsite Response Organizations (ORO) should share data in a timely manner with all appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 4.b—Post Plume Phase Field Measurements and Sampling

Intent

This sub-element is derived from NUREG–0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion pathway zone (IPZ) and for relocation, re-entry and return measures. This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making. (NUREG–0654, H.12; I.8; J.10.a, 11)

Extent of Play. The Offsite Response Organizations (ORO) field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 4.c—Laboratory Operations

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG–0654, C.3; I.8, 9; J.11)

Extent of Play. The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources

(*e.g.,* compacts, utility, nuclear insurers, *etc.*), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 5—Emergency Notification and Public Information

Sub-Element 5.a—Activation of the Prompt Alert and Notification System

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP–10, ''Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants.''

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG–0654, E. 1, 4, 5, 6, 7)

Extent of Play. Responsible Offsite Response Organizations (ORO) should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.

For exercise purposes, timely is defined as ''the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.'' If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages *is not* required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation. The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.2: After the State and local governmental agency (agencies) point of contact is notified by the licensee of the situation requiring urgent action, activities associated with primary alerting and notification of the public in the event of an emergency situation requiring urgent action (a fast-breaking situation) are completed in one of the two following ways:

(1) The State and local governmental agency (agencies) point of contact has 15 minutes from verified notification by the licensee in which to complete primary alerting and notification of the public. In addition, the initial point of contact must demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures.

(2) The State and local governmental agency (agencies) point of contact promptly (in a timely manner) notifies State and local official(s) of the situation requiring urgent action, who then have 15 minutes in which to complete primary alerting and notification of the public.

The initial instructional message to the public must include the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG–0654, E. 1, 3, 5, 6, 7)

Extent of Play. The ORO's capability to meet this criterion must be evaluated at least once every six years during a fast breaker drill. The ORO's established fast-breaking incident procedures will be evaluated. When the ORO's point of contact is notified by the licensee of an emergency situation requiring urgent action, the applicable ORO should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ in one of the following two ways:

(1) The State and local governmental agency (agencies) point of contact demonstrates the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ within 15 minutes of verified notification from the utility that a situation exists requiring urgent action. The initial instructional message should include the elements required by current FEMA REP guidance. The ''clock'' will start when the transmission of an initial notification of a General Emergency and a protective action recommendation from the utility is completed and verified. Within 15 minutes, actual contact of the primary notification system facility (facilities) and dissemination of the initial message to the public should be demonstrated; this is when the ''clock'' will stop.

Broadcast of the message may be simulated; however, once again, all activities leading to that point should be demonstrated. In addition, the ORO(s) should demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures. This contact may occur either prior to, or immediately subsequent to, activation of the primary alerting and notification system. Although it must be accomplished in a timely manner, contact of the decision-maker does not have to be completed within the 15-minute timeframe discussed above. The drill will be terminated when the alert signal activation (simulated) is initiated, the broadcast (simulated) is initiated by the primary notification system facility (facilities), and an authorized offsite decision-maker has been contacted.

(2) The State and local governmental agency (agencies) point of contact demonstrates the capability to promptly (in a timely manner) notify State and local official(s) of the situation requiring urgent action, who then must sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ within 15 minutes of notification by the point of contact. The initial instructional message should include the elements required by current FEMA REP guidance. The ''clock'' will start when the transmission of an initial notification of a situation requiring urgent action is received by the State and local governmental official(s). Within 15 minutes, actual contact of the primary notification system facility (facilities) and dissemination of the initial message to the public should be demonstrated; this is when the ''clock'' will stop. Broadcast of the message may be simulated; however, once again, all activities leading to that point should be demonstrated. The drill will be terminated when the alert signal activation (simulated) is initiated and the broadcast (simulated) is initiated by the primary notification system facility (facilities).

The drill will be scheduled to be conducted ''Unannounced'' within a one-week window. The evaluators and controllers for each jurisdiction will be briefed in detail concerning the extent of play and timing of the drill. Evaluators and controllers will be stationed at each location where actions will be initiated, where alert signals are controlled, and at the applicable primary notification system facility (facilities). The actual activation of the alert signal may be simulated; however, all activities leading up to activation should be demonstrated and should be completed within the 15-minute time frame. It should be noted that coordination among OROs is normally desirable; however, in the event of a fast breaker situation this coordination is not necessary prior to activation of the primary alert and notification sequence.

All activities for this criterion must be based on the ORO's plans and procedures

and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG–0654, E. 6, Appendix 3.B.2.c)

Extent of Play. Offsite Response Organizations (ORO) with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5–10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location.

Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the Public Address system will be conducted at some agreed upon location.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Sub-Element 5.b—Emergency Information and Instructions for the Public and the Media

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG–0654 provides that OROs should ensure the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG–0654 also provides that a system be available for dealing with rumors.

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG–0654, E. 5, 7; G.3.a, G.4.a, b, c)

Extent of Play. Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as ''the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.'' If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

The Offsite Response Organizations (ORO) should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions to assist the public in carrying out protective action decisions provided to them (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, rumor control telephone number, etc.). The ORO should also be prepared to disclose and explain the emergency classification level (ECL) of the incident. As a minimum, this must be included in media briefings and/or press releases. OROs should demonstrate the capability to use language that is clear and understandable to the public, including tribes, within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.

If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute press releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and press releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and press releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with rumors. Rumor control staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the rumor control staff, including information that corrects false or inaccurate information when trends are noted, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or press releases.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 6—Support Operation/ Facilities

Sub-Element 6.a—Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

Criterion 6.a.1: The reception center/ emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG–0654, J.10.h; J.12; K.5.b)

Extent of Play. Radiological monitoring, decontamination, and registration facilities for evacuees/ emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the

extent of play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Prior to using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the emergency planning zone (EPZ) population planning base within about 12 hours. This monitoring productivity rate per hour is the number of evacuees that can be monitored per hour by the total complement of monitors using an appropriate monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the twelve-hour requirement can be met. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (e.g., partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

Monitoring personnel should explain the use of action levels for determining the need for decontamination. They should also explain the procedures for referring evacuees who cannot be adequately decontaminated for assessment and follow up in accordance with the ORO's plans and procedures. Contamination of the individual will be determined by controller inject and not simulated with any low-level radiation source.

The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated. The registration activities demonstrated should include the establishment of a registration record for each individual, consisting of the individual's name, address, results of monitoring, and time of decontamination, if any, or as otherwise designated in the plan. Audio recorders, camcorders, or written records are all acceptable means for registration.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 6.b—Monitoring and Decontamination of Emergency Worker Equipment

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. (NUREG–0654, K.5.b)

Extent of Play. The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the Offsite Response Organizations (ORO) plans and procedures. Specific attention should be given to equipment, including vehicles, that was in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment including vehicles based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency with all route markings, instrumentation, record keeping and contamination control measures in place. Monitoring procedures should be demonstrated for a minimum of one vehicle. It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as air intake systems, air filters, radiator grills, bumpers, wheel wells and tires of vehicles, and door handles, as a minimum, should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-Element 6.c—Temporary Care of Evacuees

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross (ARC) under existing letters of agreement.

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. (Found in MASS CARE—Preparedness Operations, ARC 3031) Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG–0654, J.10.h, J.12)

Extent of Play. Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with ARC 3031. In this simulation, it is not necessary to set up operations as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this objective, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility (facilities). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-Element 6.d—Transportation and Treatment of Contaminated Injured Individuals

Intent

This sub-element is derived from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG–0654, F.2; H.10; K.5.a, b; L.1, 4)

Extent of Play. Monitoring, decontamination, and contamination control

efforts will not delay urgent medical care for the victim.

Offsite Response Organizations (ORO) should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service for an extended time, any vehicle (e.g., car, truck, or van) may be utilized to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the victim may be performed prior to transport, done enroute, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Dated: June 5, 2001.

Archibald C. Reid III,

Acting Executive Associate Director, Preparedness, Training & Exercises Directorate.

[FR Doc. 01–14637 Filed 6–8–01; 8:45 am]

BILLING CODE 6718–06–P

FEDERAL EMERGENCY MANAGEMENT AGENCY

Radiological Emergency Preparedness: Alert and Notification

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: FEMA is considering whether it should continue to require State and local emergency management agencies to characterize and to identify the appropriate Emergency Classification Level (ECL) when initially notifying the public of incidents at nuclear power plants. We also are considering whether to leave to the discretion of State and local emergency management agencies what, if anything, to say about protective action recommendations. We invite your views on these issues and on any other concerns that you may have about the content of initial notification messages.

DATES: Please submit your comments on or before August 10, 2001.

ADDRESSES: Please submit your comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, or send them by e-mail to *rules@fema.gov.* Please refer to the ''REP Alert and Notification Notice'' in the subject line of your e-mail or comment letter.

FOR FURTHER INFORMATION CONTACT: Vanessa Quinn, Chief, Radiological Emergency Preparedness Branch, Chemical and Radiological Preparedness Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472; (202) 646–3664, or (e-mail) *vanessa.quinn@fema.gov,* or Nathan S. Bergerbest, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., Washington DC 20472, (202) 646–2685, or (e-mail) *nathan.bergerbest@fema.gov.*

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA), through its Radiological Emergency Preparedness program (REP), reviews the emergency response plans of Offsite Response Organizations (OROs), which are the State and local emergency management agencies responsible for responding to incidents involving nuclear power plant. FEMA also conducts exercises to test the capability of OROs to perform in accordance with the provisions of their plans. These activities are undertaken pursuant to FEMA regulations, which appear in Part 350 of Title 44 of the Code of Federal Regulations and a Memorandum of Understanding between FEMA and the Nuclear Regulatory Commission which appears at 44 CFR Part 353, Appendix A.

FEMA recently completed a strategic review of the REP program. In the course of the strategic review, questions were raised regarding what information should be included in the initial message informing the public that an incident has occurred at a nuclear power plant.

FEMA requires that OROs demonstrate their ability to communicate effectively with the public following an incident at a nuclear power plant. We address how this initial notification should be given to the public in several guidance documents. These include the joint *FEMA/Nuclear Regulatory Commission Criteria for Preparation and Evaluation of Radiological Emergency Response Plans* and *Preparedness in Support of Nuclear Power Plants (NUREG–0654/REP–1, Rev. 1),* dated November 1980 [1], FEMA's *Radiological Emergency Preparedness Exercise Manual (REP–14),* dated September, 1991 [2], FEMA's *Radiological Emergency Preparedness Exercise Evaluation Methodology (REP–15),* dated September, 1991 [3] and FEMA's *Guidance for Providing Emergency Information and Instructions to the Public for Radiological Emergencies Using the New Emergency Alert System (EAS),* dated February 2, 1999.[4]

FEMA regulations require that planning standards and evaluation criteria in NUREG–0654/FEMA REP–1, Rev. 1,[5] and the Nuclear Regulatory Commission's emergency planning rule [6] are to be used in evaluating ORO plans and capabilities. While both the Nuclear Regulatory Commission's emergency planning rule and NUREG–0654/FEMA REP–1, Rev. 1 contemplate that initial notification messages will be made in a timely manner, neither prescribe the content of the initial notification message.[7]

[1] Planning Standard F, evaluation criterion E.7

[2] Objective 11.

[3] Objective 11.

[4] Attachment ''B'' to Memorandum for FEMA Regional Directors and Regional Assistance Committee Chairs from Kay C. Goss, Associate Director for Preparedness, Training and Exercises. The attachment can be viewed at *htpp://www.fema.gov/pte/rep/easrep.htm.* (viewed May 30, 2001). This document is referred to as the ''February 2, 1999 Guidance'').

[5] 44 CFR 350.5.

[6] 10 CFR 50.47, 10 CFR Part 50 (Appendix E) and Part 70.

[7] Planning Standard ''E'', evaluation criteria E.7 provides that ''Each [ORO] shall provide written messages intended for the public, consistent with the [nuclear power plant's classification scheme. In particular, draft messages to the public giving instructions with regard to specific protective actions to be taken by occupants of affected areas shall be prepared and included as part of the State and local [emergency response plans]. Such messages should include the appropriate aspects of sheltering, ad hoc respiratory protection, e.g., handkerchief over mouth, thyroid blocking or evacuation * * *''

[Federal Register: June 11, 2001 (Volume 66, Number 112)]
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Part IV

Federal Emergency Management Agency

Radiological Emergency Preparedness: Exercise Evaluation Methodology; Alert and Notification; Notices

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FEDERAL EMERGENCY MANAGEMENT AGENCY

Radiological Emergency Preparedness: Exercise Evaluation Methodology

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: The Federal Emergency Management Agency (FEMA) proposes to revise the Radiological Emergency Preparedness Exercise Manual (REP-14) dated September 1991 by adopting the six Exercise Evaluation Areas described in this notice in place of the 33 REP-14 Objectives that are set out in Section D of REP-14. If the Exercise Evaluation Areas described in this notice are adopted, Radiological Emergency Preparedness exercises conducted pursuant to 44 CFR 350.9 will be evaluated against the criteria set out in this notice. The proposed frequency with which each of the proposed Exercise Evaluation Areas will be evaluated is also contained in this notice. Adoption of the proposed changes to REP-14 will render a companion manual entitled Radiological Emergency Preparedness Exercise Evaluation Methodology (REP-15) dated September 1991 obsolete. If the proposed changes to REP-14 are adopted, FEMA plans to rescind REP-15 and utilize a new form entitled ``Evaluation Module'' to document evaluations. We invite

comments on the Exercise Evaluation Areas and the proposed frequency for exercising each area and the Evaluation Module form.

DATES: FEMA must receive comments on or before August 10, 2001.

ADDRESSES: You may submit your comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, or send them by e-mail to rules@fema.gov. Please reference ``REP Exercise Evaluation Areas'' in the subject line of your e-mail or comment letter.

FOR FURTHER INFORMATION CONTACT: Vanessa Quinn, Chief, Radiological Emergency Preparedness Branch, Chemical and Radiological Preparedness Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472; telephone: (202) 646-3664, or e-mail: vanessa.quinn@fema.gov, or Nathan S. Bergerbest, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC 20472, telephone: (202) 646-2685, or (e-mail) nathan.bergerbest@fema.gov.

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) proposes to revise the Radiological Emergency Preparedness Exercise Manual (REP-14) \1\ dated September 1991 by adopting the six Exercise Evaluation Areas described in this notice and deleting the thirty-three REP-14 Objectives that are set out in Section D of REP-14. If the Exercise Evaluation Areas described in this notice are adopted, Radiological Emergency Preparedness exercises conducted pursuant to 44 CFR 350.9 will be evaluated against the criteria set out in this notice.\2\

\1\ FEMA is planning to consolidate REP-14 into a new reference book. The contents of REP-14, including any changes resulting from final action on the issues discussed in this notice, will be incorporated into this new reference book. At this time, we are proposing to revise not withdraw REP-14. We expect to formally withdraw REP-14 when the new reference book is available.

\2\ Adoption of the proposed Evaluation Criteria will also render much of Sec. C.2 of REP-14 obsolete. Pages C.2-3 and C.2-4 of REP-14 speak to the frequency with which particular REP-14 objectives will be exercised. FEMA proposes to adopt the Federal Exercise Evaluation Matrix, which appears later in this document as Table 2 in place of the exercise objective groupings which appear on Pages C.2-3 and C-2.4 of REP-14.

Adoption of the proposed changes to REP-14 will render a companion manual entitled Radiological Emergency Preparedness Exercise Evaluation Methodology (REP-15) dated September 1991 obsolete. If the proposed changes to REP-14 are adopted, FEMA plans to rescind REP-15 and utilize a new form entitled ``Evaluation Module'' to document evaluation activities. The rescission will be effective on the same date upon which the changes to REP-14 are effective and the Evaluation Module form will be effective on the same date. We invite comments on the Exercise Evaluation Areas and the proposed frequency for exercising each area and the Evaluation Module form.

Background on Exercise Evaluation

FEMA, through its Radiological Emergency Preparedness Program (REP)

conducts exercises to evaluate the ability of Offsite Response Organizations (OROs) to respond to an emergency involving a commercial nuclear power plant. These exercises are conducted in accordance with FEMA regulations, which appear in 44 CFR part 350.\3\ Although Sec. 350.9 is the portion of Part 350 that primarily speaks to exercises, it does not specifically address the standards under which exercises are to be conducted and performance is to be evaluated. These standards are addressed in 44 CFR 350.5(a) which states:

\3\ The preamble to 44 CFR part 350 is published at 48 FR 44332 (September 28, 1983).

Section 50.47 of [the Nuclear Regulatory Commission's] Emergency Planning Rule [10 CFR Parts 50 [Appendix E] and 70 as amended and the joint FEMA-Nuclear Regulatory Commission Criteria for Preparation and Evaluation of Radiological Response Plants and Preparedness In Support of Nuclear Power Plants (NUREG-0654/FEMA REP-1, Rev 1 November, 1980) * * * are to be used in reviewing, evaluating and approving State and local radiological emergency plans and preparedness and in making any findings and determinations with respect to the adequacy of the plans and the capabilities of state and local government to implement them. Both the planning and preparedness standards and related criteria contained in NUREG-0654/ FEMA REP-1, Rev. 1 are to be used by FEMA and the [Nuclear Regulatory Commission] in reviewing and evaluating State and local government radiological emergency plans and preparedness.\4\

\4\ See also, 44 CFR 350.13(a) which states in relevant part ``The basis upon which [FEMA] makes the determination for withdrawal of approval [of a State or local radiological emergency plan] is the same basis used in reviewing plans and exercises, i.e. the planning standards and related criteria in NUREG 0654/FEMA REP-1, Rev. 1.''

Planning Standard N of NUREG-0654/FEMA REP 1, Rev. 1 addresses the conduct of exercises. The Planning Standard states that ``Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities * * * and deficiencies identified as a result of exercises * * * are (will be) corrected.'' Evaluation criterion 1.a defines an exercise as ``an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.''

The Planning Standard N criteria contain several requirements for exercises. All exercises must simulate an emergency that results in offsite radiological emergency releases, which would require response by offsite authorities. Scenarios should be varied from year to year and conducted under various weather conditions; some exercises or drills should be unannounced.\5\ In other respects, the Planning Standard N criteria contemplate that exercises will be conducted as set forth in Nuclear Regulatory Commission and FEMA rules and in exercise evaluation guidance.\6\

\5\ See, Planning Standard N, evaluation criteria 1.a and 1.b

\6\ See, Planning Standard N, evaluation criteria 1.a (rules) and 3 (exercise evaluation guidance).

In September 1991, FEMA published the current exercise evaluation

guidance, which is REP-14. REP-14

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established a series of 33 objectives (REP-14 Objectives) that interpret and apply the guidance contained in NUREG-0654/FEMA REP-1, Rev. 1. A companion document, REP-15 contained a series of forms and checklists keyed to the 33 REP-14 Objectives for use by exercise evaluators in documenting performance. FEMA circulated both documents for public comment.\7\

\7\ On March 27, 1991, FEMA noticed the availability for REP-14 and REP-15 for public comment in the Federal Register [56 FR 12734]. It responded to public comments in a third publication, REP-18. See, 57 FR 4880 (February 10, 1992) corrected by 57 FR 10956 (March 31, 1992).

REP-14 also established the frequency with which each of the objectives would be demonstrated in exercises. The 33 REP-14 Objectives were divided into three groups. Thirteen objectives in the first group would need to be demonstrated in every exercise. Nine objectives in the second group should be demonstrated in every exercise by some but not all responding organizations as the scenario dictates, provided that all responding organizations must demonstrate the objective once every six years. Another eleven objectives must be demonstrated once every six years.\8\

\8\ See, REP-14, pages C-2.3 to C-2.4.

Strategic Review Process

In June 1996, the Director of the Federal Emergency Management Agency initiated a strategic review of the REP Program. This review was announced in the Federal Register in June 1996 and suggestions for improvement in the REP Program were solicited from the public. The respondents raised 180 issues. Seventy comments specifically addressed the conduct of exercises. Many commenters suggested that FEMA make exercise evaluation criteria outcome-based and less prescriptive. These commenters, representing States, local governments, and industry, suggested that evaluations should stress successful completion of basic health and safety objectives, with the specifics of accomplishing this left up to the OROs.

The comments were turned over to a Strategic Review Steering Committee for review.\9\ Due to the large number of comments received on the conduct of exercises, the Strategic Review Steering Committee commissioned a concept paper on exercise streamlining. The concept paper was released to the public \10\ and comments were received at stakeholder meetings in St. Louis, San Francisco and Washington DC in 1997.\11\

\9\ The Strategic Review Steering Committee was composed of federal employees from FEMA headquarters, FEMA regional offices and the Nuclear Regulatory Commission.

\10\ The concept paper can be reviewed at http://www.fema.gov/pte/rep/exercise.htm (viewed on May 22, 2001).

\11\ The transcripts of the three public meetings can be reviewed at http://www.fema.gov/pte/rep/trans.htm (viewed on May 22, 2001).

The concept paper identified several key issues for further consideration.

REP-14 and REP-15 should be revised to support a ``results oriented'' exercise evaluation process.

REP exercises should concentrate on radiological issues.

REP-14 and REP-15 could be streamlined by combining similar objectives and points of review without harming the evaluation process.

REP-14 and REP-15 are out of date due to changes in federal regulations, guidance and terminology.

The required demonstration frequency of objectives should be reevaluated. Some objectives should be demonstrated more frequently and others less frequently.\12\

\12\ FEMA is proposing to address each of these issues through the changes described in this notice. Other issues identified in the concept paper will not be addressed through this notice. The concept paper observed that some aspects of radiological emergency preparedness can be demonstrated separate and apart from the exercise. It suggested that FEMA should provide guidance on when ``out of sequence'' demonstrations are permissible. FEMA has issued a policy statement on this issue which was made effective October 1, 1999. The policy statement may be viewed at http://www.fema.gov/pte/rep/fnlpl-3.htm (viewed May 30, 2001). The concept paper also observed that some aspects of radiological emergency preparedness are satisfactorily demonstrated by actual responses to disasters and emergencies or through other exercises in which OROs participate and credit should be given for demonstrated performance outside of a REP exercise. FEMA is still considering this issue. The concept paper suggested that FEMA should explore alternative approaches to evaluating emergency preparedness in addition to exercises. For example, it is suggested that maintenance and calibration of equipment that must be maintained under a radiological emergency response plan, can and should be verified separate and apart from an exercise. FEMA currently requires that OROs certify that various aspects of the radiological emergency response plans are functional through an ``Annual Letter of Certification.'' FEMA reserves the right to audit an ORO's representations in the Annual Letter of Certification. Some of the evaluation criteria contained in NUREG-0654/FEMA REP-1, Rev. 1 will not be exercised under the proposed Exercise Evaluation Areas described in this notice. This is because these criteria are most appropriately verified, in FEMA's judgment, through the Annual Letter of Certification and audits pursuant thereto. The concept paper recommended that FEMA expand its program of staff assistance visits to regularly provide feedback on emergency preparedness issues. FEMA is expanding this program.

On September 9, 1998, FEMA published the draft final recommendations of the Strategic Review Steering Committee for public comment. Recommendation 1.1 addressed the 33 REP-14 Objectives. The Strategic Review Steering Committee noted:

Exercises are currently evaluated in an ``objective based format.'' * * * This system is very structured and leaves little latitude for satisfying the objective by alternate means. Stakeholders have identified the obvious similarities between objectives. Experience in exercise evaluations indicates that several objectives can easily be combined, and others deleted, without weakening the evaluation process. * * * [We recommend] the consolidation of current objectives into * * * six Evaluation Areas * * * These Evaluation Areas would be established to support a ``results oriented'' evaluation process. Results oriented evaluation allows FEMA to focus on the outcome of actions taken by players in the implementation of their plans and procedures. This approach will give the exercise players more latitude to reach the desired results. Evaluators would then concentrate on the results of an exercise activity, not on the steps taken to arrive at a result. Within each Evaluation Area, objectives would be combined and duplicative Points of Review would be eliminated.'' \13\

\13\ 63 Fed. Reg. 48225 (September 9, 1998).

The Strategic Review Steering Committee recommended the consolidation of 29 of the 33 REP-14 Exercise Objective into six Exercise Evaluation Areas with sub-criteria. It also recommended the elimination of four of the REP-14 Objectives.\14\

\14\ These were REP-14 Objectives 23, 31, 32 and 33. FEMA is proposing to eliminate REP-14 Objectives 23 and 31 in their entirety. Objective 23 tested the ORO's ability to identify and utilize federal and voluntary agency resources. FEMA plans to take lead responsibility for identifying available federal resources. The decision on whether to use these resources belongs to the ORO. A determination of whether the ORO is effectively utilizing voluntary agency resources is more appropriately made in reviewing the ORO's plans. Objective 31 tested the ORO's ability to evacuate non-essential personnel from the nuclear power plant site. We have concluded that the emergency preparedness benefit of evaluating this capability separate and apart from the capability to evacuate members of the general public is negligible. However, Objectives 32 (demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill) and 33 (demonstrate the capability to carry out emergency response functions during an off-hours drill or exercise) are not proposed for elimination. These REP-14 Objectives would be folded into Exercise Evaluation Area 5.a.2, which provides for an unannounced drill of an incident requiring urgent response action by ORO's (also known as a ``fast breaker''). The drill may occur during off-hours.

Recommendation 1.2 addressed the frequency of demonstrations. The frequency for exercising each of the evaluation areas and sub criteria was set out in a table which accompanied Recommendation 1.2.\15\

\15\ 63 Fed. Reg. 58226-58227 (September 9, 1998).

Respondents to FEMA's request for public comment generally favored Recommendations 1.1 and 1.2.\16\ On March

25, 1999, the strategic review recommendations, including Recommendations 1.1 and 1.2 were turned over to the REP Program by Kay C. Goss, CEM, Associate Director for Preparedness, Training and Exercises for further consideration. This notice addresses the proposed implementation of Recommendations 1.1 and 1.2.

\16\ A compilation of comments and the Strategic Review Steering Committee's response appears on the REP Internet site, http://www.fema.gov/pte/rep/finalrecc10 99.doc (visited May 22, 2001).

Implementation of Strategic Review Steering Committee Recommendation 1.1

FEMA proposes to implement Recommendation 1.1 through adoption of the Exercise Evaluation Areas described in this notice. Two drafts of the Exercise Evaluation Area have already been released for public comment on the REP website. The first draft was released in November 1999. These comments and responses from the drafting group have been placed on the REP website.\17\ A second draft was released in March 2000.\18\

\17\ http://www.fema.gov/pte/rep/comments.doc (viewed May 22, 2001).

\18\ http://www.fema.gov/pte/rep/recini.htm (viewed May 22, 2001).

During the fall of 2000, FEMA conducted pilot tests of the six draft Exercise Evaluation Areas at four nuclear power plants in different FEMA regions. A Pilot Evaluation Team, comprised of REP Regional Assistance Committee Chairs and FEMA headquarters REP staff, observed and assessed the pilot exercises. The team was instructed to identify any evaluation areas that needed revision. It was also asked to consider whether the new evaluation methodology provided an equal if not more robust review of State and local emergency response plans and procedures than the objective ``checklist approach.''

The conclusions drawn by the Pilot Evaluation Team are consistent with the comments FEMA has received since the inception of the strategic review process. Based upon these comments and reports from the Pilot Evaluation Team, FEMA has concluded:

The current REP-14 and REP-15 evaluation methodology resulted in predictable exercises, judged against checklists; exercises under the proposed criteria will be based on emergency response plans, not the checklists, and should facilitate better coordination, communication, decisionmaking and implementation.

Utilization of the new methodology will facilitate the introduction of more challenging scenarios geared to the particular community being evaluated. It will reduce the artificiality of exercises and more closely replicate responses to real incidents.

The proposed methodology, which focuses on results, will increase ORO enthusiasm for exercise participation and

substantially reduce the perception that the evaluators are nit-picking performance.

The proposed methodology is more demanding on evaluators than the current checklists. It requires that they explain in narrative form what was observed and whether performance was adequate. This will result in more effective communication between evaluators and OROs about exercise issues and plan shortcomings. It will also provide the REP Program with better data from which to draw conclusions about emergency preparedness on a national level.

Emergency preparedness can be significantly enhanced through better focused exercise evaluation criteria, coupled with FEMA's renewed emphasis on the Annual Letter of Certification and more frequent staff assistance visits.

Highlights of the Proposed Exercise Evaluation Areas

Evaluation Area 1--Emergency Operations Management

Evaluation Area 1 has five sub-elements: (a) mobilization, (b) facilities, (c) direction and control, (d) communications equipment and (e) equipment and supplies to support operations.

Criterion 1.a.1 requires that the OROs use effective procedures to alert, notify and mobilize emergency personnel and activate facilities in a timely manner. One of the more difficult issues to arise from the strategic review is how OROs demonstrate their twenty-four hour staffing capability in an exercise. The evaluation criteria associated with Planning Standard ``A'' of NUREG-0654/FEMA REP-1, Rev. 1 require that ``each principal organization shall be capable of continuous (twenty-four-hour) operations for a protracted period.'' \19\ These criteria also require that each State and local response organization be capable of twenty-four-hour emergency response.\20\

\19\ Planning Standard A, evaluation criterion A.4.

\20\ Planning Standard A, evaluation criterion A.1.e

REP-14 Objective 30.1, which implements these criteria, presently requires all agencies responsible for providing twenty-four-hour staffing demonstrate a shift change once every six years. The shift change is demonstrated by providing a ``one-for-one replacement . . . of key staff responsible for communications, direction and control of operations, alert and notification for the public and the media, radiological monitoring, protective response and medical and public health support.'' \21\

\21\ REP-14 page D.30-1

REP-14 Objective 30.2 requires that outgoing staff members should demonstrate their capability to brief their replacements on the current status of the simulated emergency. The purpose of this demonstration is to assure that the transition from the outgoing to incoming shift is accomplished without discontinuity in operations.

The dissatisfaction within the REP community about Objective 30 seems to stem from time constraints associated with the exercise. OROs will bring a second shift (often composed of volunteers who

must take time away from other responsibilities) in for the exercise, only to discover that there is little time left in the exercise for the second shift to actually demonstrate their capabilities.

FEMA is sympathetic to the dissatisfaction with the present approach. However, we are equally uneasy about simply eliminating the shift change requirement. NUREG-0654/FEMA REP-1, Rev. 1, requires that we verify that response organizations have sufficient trained people in the key positions to perform twenty-four-hour operations. Moreover, we are concerned that our present approach offers those on the second and the third shift little opportunity to train for a real emergency through exercise participation.

Our proposed criterion 1.a.1 eliminates the requirement that OROs demonstrate a shift change once every six years. In order to assure that OROs have sufficient staffing to support twenty-four hour operations, we propose that the exercise evaluators inspect the procedures for twenty-four hour staffing at each facility and a staff roster to determine whether the response organization has identified the necessary personnel to carry out critical functions. These critical functions are the same functions named in REP-14 Objective 30.1. The inspection would occur during each exercise.\22\ This approach is consistent with Planning Standard ``A'' of NUREG-0654/FEMA REP-1, Rev. 1. and its associated criteria. Neither requires the demonstration of a shift change.

\22\ Additional assurance that OROs have sufficient trained personnel to support twenty-four-hour response and operations is contained in the Annual Letter of Certification. FEMA may audit the ORO's representations in the Annual Letter of Certification.

However our consideration of the shift change issue leaves us mindful of the need to assure that key personnel on the off-hours shifts can perform as well as the primary responders. Without an opportunity to observe the performance of these personnel in an exercise, we are uncertain about whether the key personnel on the off-hours shifts can perform up to the standard that those who regularly exercise do. Moreover, we are concerned that our present exercise approach denies those in key positions on off-hours shifts an opportunity to train through meaningful exercise participation.

For this reason, FEMA is inclined to require that OROs demonstrate their twenty-four hour response capability by alternating the personnel that participate in the biennial exercises from among the shifts.\23\ For example, the first biennial exercise of each six year cycle might involve personnel from the first twelve-hour shift. The second biennial exercise in the six year cycle would involve personnel from the second twelve-hour shift. The third biennial exercise in the six year cycle would involve personnel from the third shift (if the ORO uses three shifts in its plan) or the first shift (if the ORO uses two shifts in its plan) This would provide an opportunity for the key personnel on all shifts to have an opportunity to train by participating in an exercise as well as an opportunity for FEMA to evaluate the performance of all of the individuals who will play key roles in an actual response.

\23\ We define key positions in this proposal in the same way

that they are defined in REP-14 Objective 30.1, i.e. communications, direction and control of operations, alert and notification of the public, accident assessment, information for the public and the media, radiological monitoring, protective response, and medical and public health support functions.

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We recognize that a limited number of key personnel, such as a county Emergency Management Director, intend to remain involved in an actual emergency response on a twenty-four-hour basis until the incident is resolved. We are prepared to accommodate the participation of these individuals in every exercise, but expect that each will have their designated successor participate in the exercise. An exercise scenario might provide that a county Emergency Management Director is unable to perform his or her duties and an alternate must step in to take over the operation.

FEMA believes it is crucial for all personnel expected to perform key roles in a radiological emergency response to exercise in their roles. However, we are not prepared to move forward with a definitive plan to achieve this objective without your comments. If you do not agree with the proposal described above, we would appreciate your identification of alternative means through which FEMA can assure that the key personnel who are expected to work the off-hours shifts are as well trained as those who work the shift that most often exercises. We are interested in your comments about whether FEMA needs to make any changes in the way it conducts exercises, i.e. commencing exercises on weekends, holidays or off-hours, to facilitate participation from those who would serve on the off-hours shifts in the event of an actual emergency. We also seek your views on whether or not this proposal will result in a net benefit to emergency preparedness.

Our review of the issues associated with the shift change also leads us to believe that the briefing required by Objective 30.2, which presently needs to be demonstrated only once every six years, should be demonstrated at every exercise in the future. This provision has been written into proposed criterion 1.a.1. We propose to give OROs the option of bringing in a second shift of key responders to receive the briefing or to provide the briefing to the evaluators.

Criterion 1.b.1 requires that the ORO demonstrate that its facilities are sufficient to support the emergency response. Under the proposed exercise methodology, facilities will only be evaluated if they are new or have substantial changes in structure or mission. It seems redundant to require the re-evaluation of a facility every two years if the facility has not changed. This change does not affect the current requirement that OROs certify in the Annual Letter of Certification that their facilities are available and adequate to meet emergency response needs. FEMA reserves the right to audit the representations made in the Annual Letter of Certification.

Criterion 1.c.1 requires that key personnel with leadership roles for the ORO provide direction and control to that part of the overall response for which they are responsible. This requirement is identical to that in Objective 3.1 \24\ of REP-14.

\24\ References to the REP-14 Objectives will appear in this form throughout this notice. REP-14 Objective 3.1 is Objective 3, Criterion 1.

Criterion 1.d requires that communications capabilities are managed in support of emergency operations with communication links established and maintained with appropriate locations. The proper functioning of communications equipment is essential to success in any exercise, just as it is essential to success in any response. FEMA expects that both the primary and backup communications systems, which are required by Planning Standard F, Evaluation Criteria F.1 of NUREG-0654/FEMA REP-1 Rev. 1, will be fully functional at the commencement of an exercise. Under REP-14 the functionality of these systems were tested at each exercise. Consistent with the spirit of the proposed Exercise Evaluation Areas, FEMA will not verify that the primary and backup communications systems are operational as a stand-alone evaluation item. However, we will craft exercise scenarios which call for the use of the primary system and scenarios which assume the failure of the primary system and require the use of the backup system. The ORO will not know prior to the start of the exercise whether one or both systems will be tested as part of the scenario. While an ORO may not be penalized if a communications system fails, so long as the other is operational, FEMA will take note of all communications system failures. They will be reported to Director of the REP Program and to the appropriate FEMA Regional Director and Regional Assistance Committee Chair as a planning issue.\25\ The ORO is expected to correct any communication systems failure within 60 days of the conclusion of the exercise.

\25\ See, pages B.12 and B.21 of the Federal Emergency Management Agency, Radiological Emergency Preparedness Program, Standard Exercise Report Format (October 1995).

Criterion 1.e requires that equipment, dosimetry, supplies of potassium iodide and other required supplies are sufficient to support emergency operations. The requirements are similar to those in REP-14 Objectives 2.1, 5.1, 8.2 and 14.2. FEMA may or may not verify that these items are available and in good repair as a stand-alone item in every exercise. However, our exercise scenarios ordinarily require that the equipment and supplies be put to use. If equipment and supplies are unavailable or non-functional then the ORO may not be able to perform the emergency response activity at an acceptable level. Equipment and supplies that are not checked during an exercise will be checked during a staff assistance visit. Additional assurance that equipment and supplies are available in appropriate quantities and are properly maintained will be obtained in the Annual Letter of Certification. The representations contained in the Annual Letter of Certification are subject to audit.

Evaluation Area 2--Protective Action Decisionmaking

Evaluation Area 2 assesses the ORO's ability to render decisions about what protective actions members of the public and emergency workers need to take in the wake of an incident. It has five sub-elements: emergency worker exposure control, radiological assessment and protective action recommendations and decisions for the plume

phase of the emergency,\26\ protective action decision considerations for the protection of special populations, radiological assessment and decisionmaking for the ingestion pathway exposure\27\ and radiological assessment and decisionmaking concerning relocation, re-entry and return.

\26\ The plume phase of the emergency focuses on preventing exposure of a population to radiation through direct contact with the plume.

\27\ The ingestion pathway phase focuses on preventing exposure of a population to radiation through ingestion of foods that may have been exposed to radiation.

The criteria in Evaluation Area 2 are generally similar to those in REP-14. We believe that proposed criterion 2.e.1 improves upon REP-14 Objectives 28.1 and 28.3 by eliminating the cumbersome standard and optional approaches to re-entry and relocation decisionmaking in REP-14. Criterion 2.e.1 contains a single approach to evaluating decisions in these areas

Evaluation Area 3--Protective Action Implementation

Evaluation Area 3 assesses the ORO's ability to implement protective actions, including evacuation. It contains six sub-elements: implementation of emergency worker exposure control, implementation of potassium iodide decisions, implementation of protective actions for special populations, implementation of traffic and access control, implementation of ingestion pathway decisions and implementation of relocation, re-entry and return decisions.

Criterion 3.a.1 requires that emergency workers demonstrate their ability to read dosimetry and understand the protective actions that they must take in response to specified levels. This requirement is similar to Objectives 5.1 and 5.2 in REP-14. Under the former evaluation methodology, emergency workers were subjected to the equivalent of a ``closed book examination'' on these matters. The proposed methodology makes it clear that emergency workers can refer to published procedures and confer with co-workers in responding to evaluator inquiries, just as they would, if necessary, in a real incident.

Criterion 3.b.1 tests the capability to distribute potassium iodide and appropriately instruct recipients on its use, in accordance with the ORO's emergency response plan. Potassium iodide is a non-prescription thyroid-blocking agent, which has been found effective in preventing thyroid cancer in those exposed to radiation during a nuclear plant incident. Criterion 3.b.1 also requires OROs to demonstrate their ability to maintain records on the administration of potassium iodide. Criterion 3.b.1 does not require that potassium iodide actually be administered. It requires only that OROs be able to demonstrate the functionality of this aspect of the plan.

Criterion 3.c.1 evaluates the protective action decisions that are implemented for special populations other than schools within areas subject to protective actions. OROs must demonstrate a capability to alert and notify special populations, transportation providers (including special resources for people with disabilities), and

establish reception facilities. The availability of resources to transport special populations out of the plume exposure pathway is key. For this reason, proposed criterion 3.c.1 requires that OROs actually contact at least \1/3\ of their transportation providers during each exercise to determine whether buses and drivers would be available if the exercise were an actual emergency.

Criterion 3.c.2 evaluates the capability to implement protective action decisions for schools. The proposed criterion requires that OROs contact each public school system, licensed day care provider and participating private school which would be required to implement a protective action decision if the exercise scenario were an actual emergency. Simulation of these calls is not allowed.

REP-14 Objective 16.2 presently requires that a single school bus be mobilized to drive an evacuation route as part of an exercise. FEMA does not believe that this demonstration achieves any significant emergency preparedness objective and is proposing to delete it. We do reserve the right to interview bus drivers to determine their familiarity with evacuation routes.

Criterion 3.d.1 evaluates the capability to establish and maintain appropriate traffic control and access points. REP-14 Objective 17.2 requires an actual deployment to test staffing capabilities. The proposed new criterion would not require an actual deployment. Capability could be established through an evaluative interview with appropriate public safety personnel. The decision to no longer require actual deployment stems from the recognition that public safety agencies regularly establish traffic and access control points in response to non-radiological incidents. The new criterion does not deprive FEMA of the ability to request a demonstration of actual deployment capability where appropriate. It simply establishes that actual deployment will not be required as a matter of course.

Criterion 3.d.2 evaluates the capability to remove impediments to evacuation. REP-14 Objective 17.4 required that actual telephone calls be placed to resources which might assist in removing the impediments, e.g., tow truck contractors. However, REP-14 did not require that tow trucks actually respond and remove the impediments. While there is some value in determining whether OROs maintain an accurate list of telephone numbers, it is not necessary to mandate regular testing of the ability to telephone a tow operator. The tow operators that might be relied upon in a nuclear power plant incident are similar to those who might be called upon in a traffic accident. Emergency dispatchers can reasonably be presumed to know how to contact tow operators.

Criterion 3.e.1 tests the availability and appropriate use of adequate information regarding water, food supplies, milk and agricultural production within the ingestion exposure pathway zone for implementation of protective actions. REP-14 Objective 27.1 requires that various maps and information sources required by Planning Standard J of NUREG-0654/REP-1 Rev 1 be available. The proposed criterion does not change the requirement that these information sources be available. However, it does not require that an evaluator specifically check off that they are present. Ingestion pathway exercises will be evaluated based upon whether OROs effectively use the information that must be available in addressing the exercise scenario. If the information is not available, OROs may not be able to meet the new ``results oriented'' criterion.

Criterion 3.e.2 evaluates measures, strategies and pre-printed instructional material for implementing protective action decisions for contaminated water, food products, milk and agricultural production. REP 14 Objective 11.4 requires that evaluators check off whether a distribution list is maintained and Objective 27.3 contains specific instructions on how implementation of ingestion pathway decisions should be evaluated. Through its level of detail, REP-14 established a single correct way to implement ingestion pathway decisions, notwithstanding that alternative approaches would also adequately protect public health and safety. FEMA believes that it is appropriate to give OROs the flexibility to implement ingestion pathway decisions in a way that they deem prudent. OROs will be evaluated on the basis of whether their decisions adequately protect public health and safety.

Criterion 3.f evaluates decisions regarding controlled re-entry of emergency workers and relocation and return. This criterion consolidates REP-14 Objectives 29.1, 29.2, 29.3 and 29.4.

Evaluation Area 4--Field Measurement and Analysis

Evaluation Area 4 assesses the ability of OROs to conduct and analyze field radiation measurements. It has three sub-elements: plume phase field measurement and analysis, post plume phase field measurements and sampling, and laboratory operations. The evaluation criteria are similar to those that appear in REP-14. The proposed evaluation criterion encourages OROs to utilize resources offered by federal agencies, where appropriate.

Evaluation Area 5--Emergency Notification and Public Information

Evaluation Area 5 looks at the ORO's ability to notify the public of an incident and to effectively communicate protective action recommendations. It contains two sub-elements: activation of the prompt alert and notification system and emergency information and instructions for the public and the media.

Proposed criteria 5.a.1, 5.a.2 and 5.a.3 address activation of the prompt alert and notification system. We believe that the proposed criteria represent a significant improvement in exercise methodology over REP-14. Plume exposure exercises under the REP-14 methodology have followed a familiar pattern--they all involved a scenario that incrementally escalates from a situation requiring no action by the public to a situation requiring urgent action by the public. The REP-14 methodology did not test the ability of ORO decisionmakers to reach a decision on activating the prompt alert and notification system in an atmosphere of uncertainty. The scenario left no discretion to the decisionmakers.

Proposed criteria 5.a.1 and 5.a.2 remedy this artificiality by requiring that alert and notification decisionmaking be tested under two different scenarios--one in which urgent action is not immediately required and one in which it is. Proposed criterion 5.a.1 addresses the situation in which urgent action by the public is not immediately required. Proposed criterion 5.a.2 addresses the situation in which urgent action by the public is immediately required due to quickly deteriorating conditions at the plant. This second scenario is known as the ``fast breaker.''

Proposed criterion 5.a.1 requires that the alert and notification system be activated in a timely manner following notification to the ORO by the nuclear power plant of an incident that requires activation of the alert and notification system but

does not immediately require urgent action by the public. Whether decisionmakers initiate the alert and notification system in a ``timely manner'' will be judged in relation to the scenario. We will also evaluate the quality of the public notification.

Proposed criterion 5.a.2 requires that activities associated with the alert and notification system in a ``fast breaker'' situation must be completed within fifteen minutes of the time that the ORO has received verified notification from the nuclear power plant of a situation that immediately requires urgent public action. The fifteen-minute requirement derives from Nuclear Regulatory Commission regulations which appear at 10 CFR 50.47, Appendix E.IV.D. Since fast breaking situations are by their nature unpredictable, FEMA proposes to evaluate the ``fast breaker'' response in an unannounced drill, separate and apart from regular exercises. OROs will be notified of the week in which the drill will occur, but not the specific day or time. The ``fast breaker'' drill can occur during off-hours. In formulating criteria 5.a.1 and 5.a.2, FEMA considered comments made at ``fast breaker workshops'' during the April 2000 National Radiological Emergency Preparedness Conference \28\ as well as comments submitted in the strategic review. We are especially interested in receiving written comments on proposed criteria 5.a.1 and 5.a.2 from those interested in ``fast breaker'' issues.

\28\ The National Radiological Preparedness Conference is an annual meeting of individuals with an interest in radiological emergency preparedness. The conference is sponsored by an independent non-profit organization and is open to the public.

Proposed criteria 5.a.1 and 5.a.2 do not address what information must be contained in an initial instructional memorandum to the public. Under current FEMA guidance, \29\ an initial instructional message must contain five elements at a minimum. These five elements include a coded ``Emergency

Classification Level'' \30\ and a protective action recommendation. Concerns have been expressed in the strategic review process that disclosure of an Emergency Classification Level in an initial message does not provide the public with useful information. Serious questions have been raised about when a protective action recommendation must be made, particularly if evacuation routes need to be cleared and reception facilities need to be opened to support a safe and orderly evacuation. For these reasons, FEMA is requesting comments in a notice, which appears in the same edition of the Federal Register as this one about whether its current guidance should be changed. We hope to complete our review of this guidance contemporaneously with our decision on whether to implement the proposed Exercise Evaluation Areas so that any changes concerning the content of initial messages can be incorporated into criteria 5.a.1 and 5.a.2.

\29\ The current guidance entitled ``Radiological Emergency Preparedness (REP) Guidance To Support Implementation of the Emergency Alert System (EAS)'' dated February 2, 1999 can be viewed at http://www.fema.gov/pte/rep/easrep.htm (viewed May 31, 2001). The

guidance is contained in Attachment ``B'' to the memorandum entitled ``Background on the Emergency Alert System (EAS).''

\30\ Emergency Classification Levels are a standard way through which nuclear power plants communicate the severity of incidents with onsite and offsite responders and regulatory agencies. See, Planning Standard D, NUREG-0654/REP-1, Rev. 1.

Proposed criterion 5.a.3 addresses notification of people living in very remote areas, also known as ``exception areas,'' who are not reached by alert sirens or tone alert radios. People who reside in exception areas are notified of an incident by mobile teams called ``backup route alerting teams.'' Proposed criterion 5.a.3 is similar to the REP-14 criterion with respect to notification of people in ``exception areas.''

Proposed criterion 5.a.3 also addresses backup alerting and notification of the general public in the event of a failure in the primary alert and notification system. Criterion 5.a.3 requires that the completion of backup alerting and notification within 45 minutes of the decision by offsite emergency officials to notify the public of an emergency situation. REP-14 required completion of the notification within ``approximately'' 45 minutes after the decision. The proposed criterion more closely conforms to the requirement set forth in Appendix 3 to NUREG-0654/FEMA REP-1, Rev. 1.

Proposed criterion 5.b.1 tests whether OROs provide accurate emergency information and instructions to the public and the news media in a timely fashion. While FEMA is considering whether technical information such as Emergency Classification Levels should be included in alert and notification system messages, it believes that this information should be made available to the news media with a plain Language explanation. The ORO should be prepared to explain the Emergency Classification Level and related technical information in plain Language during an exercise.

Evaluation Area 6: Support Operations/Facilities

Evaluation Area 6 assesses the ability of OROs to account for, monitor and decontaminate evacuees, emergency workers, and emergency worker equipment, to provide temporary care of evacuees and to assure that capabilities exist for transporting and treating injured individuals who have been exposed to radiation. These competencies are tested in the four sub-elements associated with Evaluation Area 6. The proposed Criteria are consistent with REP-14. While REP-14 establishes a series of prescriptive procedures that must be followed by the ORO, the proposed criteria describe the result which must be obtained, without instructing the ORO on how to obtain it.

Table 1.--Comparison of Proposed Evaluation Areas With NUREG-0654/FEMA REP-1, Rev. 1 Planning Criteria and REP 14/15 Objectives and Criteria

Evaluation area/Sub-element/ Criterion	NUREG 0654 Criteria	REP-14/15 Objective and Criterion
1--Emergency Operations	.....	1, 2, 3, 4, 5, 8, 14, 30

Management.		
1.a--Mobilization		
1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.	A.4; D.3, 4; E.1, 2; H.4.....	1.1, 1.2; 30
1.b--Facilities		
1.b.1: Facilities are sufficient to support the emergency response.	H.3.....	2.1
1.c--Direction and Control		
1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.	A.1.d; A.2.a, b.....	3.1
1.d--Communications Equipment		
1.d.1: At least two communication systems are available and at least one operates properly, and communication links are established with appropriate locations. Communications capabilities are managed in support of emergency operations.	F.1, 2.....	4.1
1.e--Equipment and Supplies to Support Operations		
1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.	H.7; J.10.a, b, e, J.11; K.3.a.....	2.1; 5.1; 8.2; 14.2
2--Protective Action Decision Making.	.....	5, 7, 9, 14, 15, 16, 26, 28
2.a--Emergency Worker Exposure Control		
2.a.1: OROs use a decision making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides.	J.10.e, f; K.4.....	5.1, 5.3; 14.1
2.b--Radiological Assessment and Protective Action		

Recommendations and Decisions for the Plume Phase of the Emergency		
2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions.	I.8,10; Supp. 3.....	7.1
2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy).	J.9; J.10.f, m.....	9.1; 14.1
2.c--Protective Action Decisions for the Protection of Special Populations		
2.c.1: Protective action decisions are made, as appropriate, for special population groups.	J.9; J.10.....	9.1; 15.1

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2.d--Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway		
2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria.	J.11.....	26.1, 26.2
2.e--Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return		
2.e.1: Timely relocation re-entry, and return decisions are made and coordinated as appropriate, based on assessments of radiological conditions and criteria in the ORO's plan and/or procedures.	M.1.....	28.1, 28.2, 28.3, 28.4, 28.5
3. Protective Action Implementation.	.....	5, 11, 14, 15, 16, 17, 27, 29

3.a--Implementation of Emergency Worker Exposure Control		
3.a.1: The OROs issues appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart.	K.3.a, 3.b.....	5.1, 5.2
3.b--Implementation of KI Decision		
3.b.1: KI and appropriate instructions are made available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained.	J.10.e.....	14.1, 14.3
3.c--Implementation of Protective Actions for Special Populations		
3.c.1: Protective action decisions are implemented for special population groups within areas subject to protective actions.	J.10.c, d, g.....	15.1, 15.2
3.c.2: ORO/School officials decide upon and implement protective actions for schools.	J.10.c, d, g.....	16.1, 16.2, 16.3
3.d--Implementation of Traffic and Access Control		
3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access personnel.	J.10.g, j.....	17.1, 17.2, 17.3
3.d.2: Impediments to evacuation are identified and resolved.	J.10.k.....	17.4
3.e--Implementation of Ingestion Pathway Decisions		
3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk and agricultural production	J.9,11.....	27.1

within the ingestion exposure pathway emergency planning zone for implementation of protective actions.		
3.e.2: Appropriate measures, strategies and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production.	E.; J.9,11	11.4; 27.2; 27.3
3.f--Implementation of Relocation, Re-entry, and Return Decisions		
3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented.	M.1, 3	29.1, 29.2, 29.3, 29.4
4--Field Measurement and Analysis		6, 8, 24, 25
4.a--Plume Phase Field Measurement and Analyses		
4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates.	H.10, I.8, 9	6.1; 8.1, 8.2
4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure.	I.8,11; J.10.a	6.3, 6.4
4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media.	I.9	6.4, 6,5; 8.3, 8.4, 8.5, 8.6
4.b--Post Plume Phase Field Measurements and Sampling		
4.b.1: The field teams	I.8; J.11	24.1

demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making.		
4.c--Laboratory Operations		
4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions.	C.3; J.11.....	25.1, 25.2
5--Emergency Notification and Public Information.	.....	10, 11, 12, 13
5.a--Activation of the Prompt Alert and Notification System		

5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum: (1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; (2) identification of the commercial nuclear power plant and a statement than an emergency situation exists at the plant; (3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and (4) a closing statement asking the affected and potentially affected population to stay tuned for additional information.	10 CFR Part 50, Appendix E; E.5, 6....	10.1
5.a.2: Activities associated with primary alerting and	10 CFR Part 50, Appendix E; E.5, 6....	10.1

notification of the public are completed within 15 minutes of verified notification from the utility of an emergency situation requiring urgent action (fast-breaking situation). The initial instructional message to the public must include as a minimum: (1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; (2) identification of the commercial nuclear power plant and a statement than an emergency situation exists at the plant; (3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and (4) a closing statement asking the affected and potentially affected population to say tuned for additional information. In addition, the ORO must demonstrate the capability to contact, in a timely manner, an authorized offsite decision maker relative to the nature and severity of the event, in accordance with plans and procedures.		
5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes of the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system.	Appendix 3: B.2.c; E.6.....	10.2, 10.3
5.b--Emergency Information and Instructions for the Public and the Media		

5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner.	E.5, 7; G.3.a; G.4.c.....	11.1, 11.2, 11.3; 12.1, 12.2; 13.1, 13.2
6--Support Operation/Facilities..	.....	18, 19, 20, 21, 22
6.a--Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees		
6.a.1: The reception center/ emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers.	J.10.h; J.12; K.5.a, b.....	18.1, 18.2, 18.3, 18.4, 18.5; 22.1, 22.2
6.b--Monitoring and Decontamination of Emergency Worker Equipment		
6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles.	K.5.a, b.....	22.1; 22.3
6.c--Temporary Care of Evacuees		
6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities.	J.10.h; J.12.....	19.1, 19.2
6.d--Transportation and Treatment of Contaminated Injured Individuals		
6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring decontamination, and medical services to contaminated	F.2; H.10; K.5.a, b; L.1; L.4.....	20.1, 20.2, 20.3, 20.4, 20.5; 21.1, 21.2, 21.3, 21.4

injured individuals.

Replacement of REP-15 With the Evaluation Module Form

Adoption of the proposed Exercise Evaluation Areas will render REP-15 which contains checklists keyed to the 33 REP-14 Objectives obsolete. FEMA plans to utilize new forms called ``Evaluation Modules'' in place of the REP-15 checklists. The Evaluation Modules will be keyed to the Exercise Evaluation Areas. A sample Evaluation Module appears below.

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Implementation of Strategic Review Steering Committee Recommendation 1.2

The REP-14 objectives are currently evaluated at the frequency described on Pages C-2.3 and C-2.4. Adoption of the proposed Exercise Evaluation Areas will render these pages obsolete. In Table 2 proposes the minimum frequency with each of the Exercise Evaluation Areas would be exercised. FEMA is open to ORO proposals to voluntarily exercise certain criteria more frequently than the minimums listed below.

Table 2.--Federal Evaluation Process Matrix

Proposed evaluation area and sub-elements	Consolidates REP-14 objective	Minimum frequency
1. Emergency Operations Management	1, 2, 3, 4, 5, 8, 14, 17, 30	
a. Mobilization		Every Exercise.
b. Facilities		Once if new.\1\
c. Direction and Control		Every Exercise.
d. Communications Equipment		Every Exercise.
e. Equipment and Supplies to Support Operations.		Every Exercise.
2. Protective Action Decisionmaking	5, 7, 9, 14, 15, 16, 26, 28	
a. Emergency Worker Exposure Control		

Every Exercise.		
b. Radiological Assessment & Protective Action Recommendations & Decisions for the Plume Phase of theEmergency.	.....	Every Exercise.
c. Protective Action Decisions for the Protection of Special Populations.	.....	Every Exercise.
d. Radiological Assessment & Decisionmaking for the Ingestion Exposure Pathway \2\.	.....	Once in 6 yrs.
e. Radiological Assessment & Decisionmaking Concerning Relocation, Re-entry, and Return \2\.	.....	Once in 6 yrs.
3. Protective Action Implementation.....	5, 11, 14, 15, 16, 17, 27, 29.....	.....
a. Implementation of Emergency Worker Exposure Control.	.....	Every Exercise.
b. Implementation of KI Decision.....	.....	Once in 6 yrs.
c. Implementation of Protective Actions for Special Populations.	.....	Once in 6 yrs.\3\
d. Implementation of Traffic and Access Control \4\.	.....	Every Exercise.
e. Implementation of Ingestion Pathway Decisions.	.....	Once in 6 yrs.
f. Implementation of Relocation, Re-entry, and Return Decisions.	.....	Once in 6 yrs.
4. Field Measurement and Analysis.....	6, 8, 24, 25.....	.....
a. Plume Phase Field Measurements & Analysis.	.....	Every Exercise.
b. Post Plume Phase Field Measurements and Sampling.	.....	Once in 6 yrs.
c. Laboratory Operations.....	.....	Once in 6 yrs.
5. Emergency Notification and Public Information.	10, 11, 12, 13.....	.....
a.1 Activation of the Prompt Alert and Notification System.	.....	Every Exercise.

a.2 Activation of the Prompt Alert and Notification System (Fast Breaking).	.....	Separate Drill once in 6 yrs.

a.3 Notification of exception areas and/ or Back-up Alert and Notification System within 45 Minutes.	.....	Every Exercise--as needed.
b. Emergency Information & Instructions for the Public and the Media.	.....	Every Exercise.
6. Support Operations/Facilities.....	18, 19, 20, 21, 22.....	.....
a. Monitoring & Decontamination of Evacuees and Emergency Workers & Registration of Evacuees.	.....	Once in 6 yrs.\3\
b. Monitoring & Decontamination of Emergency Worker Equipment \3\.	.....	Once in 6 yrs.\3\
c. Temporary Care of Evacuees \5\.....	.....	Once in 6 yrs.\5\

\1\ Will be evaluated if new or changed substantially.
\2\ The plume phase and the post-plume phase (ingestion, relocation, re-entry and return) can be demonstrated separately.
\3\ All facilities must be evaluated once during the six-year exercise cycle.
\4\ Physical deployment of resources is not necessary.
\5\ Facilities managed by the American Red Cross (ARC), under the ARC/FEMA Memorandum of Understanding, will be evaluated once when designated or when substantial changes occur; all other facilities not managed by the ARC must be evaluated once in the six-year exercise cycle.

Coordination With the Nuclear Regulatory Commission

FEMA conducts and evaluates exercises in part under authority of a Memorandum of Understanding with the Nuclear Regulatory Commission. The text of the current Memorandum of Understanding is published in Appendix A to 44 CFR Part 353 (2000 edition). Section E of the Memorandum of Understanding provides that each agency will provide an opportunity for the other agency to review and comment on emergency planning and preparedness guidance (including interpretations of agreed joint guidance) prior to adoption as formal agency guidance. FEMA has transmitted a copy of this document to the Nuclear Regulatory Commission and requested their comments no later than the date upon which the public comment period closes.

Evaluation Area 1--Emergency Operations Management

Sub-element 1.a--Mobilization

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654, A.4; D.3, 4; E.1, 2; H.4)

Extent of Play. Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. At each facility, a roster and/or procedures indicating 24-hour staffing capability for key positions (those emergency personnel necessary to carry out critical functions), as indicated in the plan and/or procedures, should be provided to the evaluator. Although demonstration of a shift change is not required, each ORO shall demonstrate its ability to transition from an outgoing shift to an incoming shift without discontinuity in operations either by having personnel in key positions briefing the evaluators or their actual replacements on the current status of the simulated emergency. In addition, responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the extent of play agreement, at those facilities located beyond a normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.b--Facilities

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have facilities to support the emergency response.

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H)

Extent of Play. Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

Facilities must be set up based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.c--Direction and Control

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to control their overall response to an emergency.

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d; A.2.a, b)

Extent of Play. Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for

example: keeping the staff informed, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.

All activities associated with direction and control must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.d--Communications Equipment

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should establish at least two reliable communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1, 2)

Extent of Play. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise

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messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system and uses a separate power source. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exist. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system.

All activities associated with the management of communications capabilities must be demonstrated based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 1.e--Equipment and Supplies to Support Operations

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have emergency equipment and supplies adequate to support the emergency response.

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H., J.10.a, b, e, j, k; j.11; K.3.a)

Extent of Play. Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of

emergency operations. Use of maps and displays is encouraged.

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked at least once each calendar quarter and after each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the CDV-700 series or if there are no manufacturer's recommendations for a specific instrument). A label indicating such calibration should be on each instrument or verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimeters should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimeters should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, a letter from the drug manufacturer should be available that documents a formal extension of the KI expiration date. Another alternative is for the ORO to obtain approval from FEMA based on a certified independent laboratory testing to extend the shelf life.

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 2--Protective Action Decision-Making

Sub-Element 2.a--Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG-0654, which provides that

an Offsite Response Organizations (ORO) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4, J.10. e, f)

Extent of Play. OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate the following capabilities on the basis of information in the emergency plan: (1) Determination of radiation exposure limits to be authorized for emergency workers; (2) appropriate decision making, based on projected doses and in accordance with emergency workers' exposure limits, as to whether or not to send emergency workers to areas within the plume exposure pathway EPZ; (3) establishment of procedures to allow emergency workers to voluntarily choose to enter the plume exposure pathway EPZ where radiation levels may expose individuals to higher than pre-authorized exposures for lifesaving missions, to protect valuable property, or to protect large populations; and (4) use of a KI decision-making process that involves close coordination between appropriate assessment and decision-making staff.

Whenever emergency personnel are planning to undertake an operation, it is essential that the best estimate of the situation be known by the personnel directing the operation. All sources of information, including projected exposure rate patterns, should be considered and a best estimate made of the exposure likely to be received during a specific mission. The mission must be planned by taking into consideration the most likely situation as well as the most potentially hazardous situation. Items to be considered include alternative entry and exit routes, potential changes in meteorological conditions, areas or roads to be avoided, equipment and vehicle failure, and other relevant items.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to manage the number of emergency workers receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAGs for KI administration.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.b.--Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Intent

This sub-element is derived from NUREG-0654, which indicates that Offsite Response Organizations (ORO) have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of

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protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions. (NUREG-0654, I.8, 10, 11 and Supplement 3)

Extent of Play. During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PAR) for decision-makers based on available information and recommendations from the licensee, and field monitoring data, if available.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAG to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PAD) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9, 10.m)

Extent of Play. Offsite Response Organizations (ORO) should have the capability to make both initial and subsequent PADs. They should

demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.

Where specified in the plan and/or procedures, responsible OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.c--Protective Action Decisions Consideration for the Protection of Special Populations

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9, J.10.c, d, e, g)

Extent of Play. Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are: weather conditions, shelter availability, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.d.--Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate PAGs, and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

During an accident at a nuclear power plant, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the accident, and depending on the nature of the release could impact the ingestion pathway for weeks or years.

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0654, I.8, 10; J.11)

Extent of Play. It is expected that the Offsite Response Organizations (ORO) will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's emergency classification levels (ECL). Such actions may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO should demonstrate timely decisions to minimize radiological impacts

from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and to the extent practical, coordinated with neighboring and local OROs.

OROs should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation

of this criterion will take into consideration the level of Federal and other resources participating.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 2.e.--Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

Intent

The sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant.

Criterion 2.e.1: Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, A.1.b; I.10; M)

Extent of Play.

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

Re-entry: Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.

Examples of control procedures are: the assignment of, or checking for, direct-reading and non direct-reading dosimeters for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment; decision criteria regarding decontamination; and proper disposition of emergency worker dosimeters and maintenance of emergency worker radiation exposure records.

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decision making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or

to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events.

Return: Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG. Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the emergency classification level and the relaxation of associated restrictive measures; basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Evaluation Area 3--Protective Action Implementation

Sub-Element 3.a--Implementation of Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3)

Extent of Play. OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimetry chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

Each emergency worker should have the basic knowledge of

radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g., written procedures and/or co-workers) in providing responses.

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimeter. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological

exposure commensurate with completing their missions.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 3.b--Implementation of KI Decision

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and

institutionalized individuals (not the general public) is maintained. (NUREG-0654, E. 7, J. 10. e, f)

Extent of Play. Offsite Response Organizations (ORO) should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

Emergency workers should demonstrate the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. This can be accomplished by an interview with the evaluator.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 3.c--Implementation of Protective Actions for Special Populations

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special populations that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, E.7; J.9, 10.c, d, e, g)

Extent of Play. Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and reception facilities may be actual or simulated, as agreed to in the Extent of Play. At least \1/3\ of transportation providers (including special resources for disabled individuals) must be actually contacted during each exercise. All actual and simulated contacts should be logged.

All implementing activities associated with protective actions for special populations must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.c.2: OROs/School officials decide upon and implement

protective actions for schools. (NUREG-0654, J.10.c, d, g)

Extent of Play. Applicable OROs should demonstrate the capability to alert and notify all public schools, licensed day care centers, and participating private schools within the emergency planning zone of emergency conditions that are expected to or may necessitate protective actions for students.

In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools and licensed day care centers should demonstrate the capability to make and implement prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

Officials of the participating school(s) or school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-Element 3.d.--Implementation of Traffic and Access Control

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g, j, k)

Extent of Play. OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control

points, consistent with protective action decisions (for example, evacuating,sheltering, and relocation), in a timely manner. OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview in accordance with the extent of play agreement.

In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

All activities must be based on the ORO's plans and procedures and completed as they

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would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10.k)

Extent of Play. OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, should be logged.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-Element 3.e--Implementation of Ingestion Pathway Decisions

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions. NUREG-0654, J.9, 11)

Extent of Play. Applicable OROs should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures

and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.e.2: Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production. (NUREG-0654, E.5, 7; J.9, 11)

Extent of Play. Development of measures and strategies for implementation of IPZ protective actions should be demonstrated during exercise play by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate pre-printed information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 3.f--Implementation of Relocation, Re-entry, and Return Decisions

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1, 3)

Extent of Play.

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs.

Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.

Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate.

Examples of control procedure subjects are: (1) The assignment of, or checking for, direct-reading and non-direct-reading dosimeters for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper disposition of emergency worker dosimeters, and maintenance of emergency worker radiation exposure records.

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Communications among OROs for relocation, re-entry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 4--Field Measurement And Analysis

Sub-Element 4.a--Plume Phase Field Measurements and Analyses

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it

is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from

the field data. Adequate equipment and procedures are essential to such field measurement efforts.

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10; I.7, 8, 9, 11)

Extent of Play. Field teams should be equipped with all instrumentation and supplies necessary to accomplish their mission. This should include instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure consistent with the intended use of the instrument and the ORO's plans and procedures, including radiological protection/ exposure control of team members and detection of activity on the air sample collection media. An appropriate radioactive check source should be used to verify proper operational response for each low range radiation measurement instrument (less than 1 R/hr) and for high range instruments when available. If a source is not available for a high range instrument, a procedure should exist to operationally test the instrument before entering an area where only a high range instrument can make useful readings. All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, H.12; I.8, 11; J.10.a)

Extent of Play. Responsible Offsite Response Organizations (ORO) should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.

Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

If the responsibility to obtain peak measurements in the plume has been accepted by licensee field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. The sharing and coordination of plume measurement information among all field teams (licensee, Federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated. OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.7, 8, 9, 11)

Extent of Play. Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. Offsite Response Organizations (ORO) should share data in a timely manner with all appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 4.b--Post Plume Phase Field Measurements and Sampling

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion pathway zone (IPZ) and for relocation, re-entry and return measures. This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making. (NUREG-0654, H.12; I.8; J.10.a, 11)

Extent of Play. The Offsite Response Organizations (ORO) field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation

of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 4.c--Laboratory Operations

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3; I.8, 9; J.11)

Extent of Play. The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources

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(e.g., compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 5--Emergency Notification and Public Information

Sub-Element 5.a--Activation of the Prompt Alert and Notification System

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to

provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, ``Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants.''

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG-0654, E. 1, 4, 5, 6, 7)

Extent of Play. Responsible Offsite Response Organizations (ORO) should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.

For exercise purposes, timely is defined as ``the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.'' If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation. The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.2: After the State and local governmental agency (agencies) point of contact is notified by the licensee of the situation requiring urgent action, activities associated with primary alerting and notification of the public in the event of an emergency situation requiring urgent action (a fast-breaking situation) are completed in one of the two following ways:

(1) The State and local governmental agency (agencies) point of contact has 15 minutes from verified notification by the licensee in which to complete primary alerting and notification of the public. In addition, the initial point of contact must demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures.

(2) The State and local governmental agency (agencies) point of contact promptly (in a timely manner) notifies State and local official(s) of the situation requiring urgent action, who then have

15 minutes in which to complete primary alerting and notification of the public.

The initial instructional message to the public must include the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG-0654, E. 1, 3, 5, 6, 7)

Extent of Play. The ORO's capability to meet this criterion must be evaluated at least once every six years during a fast breaker drill. The ORO's established fast-breaking incident procedures will be evaluated. When the ORO's point of contact is notified by the licensee of an emergency situation requiring urgent action, the applicable ORO should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ in one of the following two ways:

(1) The State and local governmental agency (agencies) point of contact demonstrates the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ within 15 minutes of verified notification from the utility that a situation exists requiring urgent action. The initial instructional message should include the elements required by current FEMA REP guidance. The ``clock'' will start when the transmission of an initial notification of a General Emergency and a protective action recommendation from the utility is completed and verified. Within 15 minutes, actual contact of the primary notification system facility (facilities) and dissemination of the initial message to the public should be demonstrated; this is when the ``clock'' will stop.

Broadcast of the message may be simulated; however, once again, all activities leading to that point should be demonstrated. In addition, the ORO(s) should demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures. This contact may occur either prior to, or immediately subsequent to, activation of the primary alerting and notification system. Although it must be accomplished in a timely manner, contact of the decision-maker does not have to be completed within the 15-minute timeframe discussed above. The drill will be terminated when the alert signal activation (simulated) is initiated, the broadcast (simulated) is initiated by the primary notification system facility (facilities), and an authorized offsite decision-maker has been contacted.

(2) The State and local governmental agency (agencies) point of contact demonstrates the capability to promptly (in a timely manner) notify State and local official(s) of the situation requiring urgent action, who then must sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ within 15 minutes of notification by the point of contact. The initial instructional message should include the elements required by current FEMA REP guidance. The ``clock'' will start when the transmission of an initial notification of a situation requiring urgent action is received by the State and local governmental official(s). Within 15 minutes, actual contact of the primary notification system facility (facilities) and dissemination of the initial message to the public should be demonstrated; this is when the ``clock'' will stop. Broadcast of the message may be simulated; however, once again, all activities leading to that point should be demonstrated. The drill will be terminated when the alert signal

activation (simulated) is initiated and the broadcast (simulated) is initiated by the primary notification system facility (facilities).

The drill will be scheduled to be conducted ``Unannounced'' within a one-week window. The evaluators and controllers for each jurisdiction will be briefed in detail concerning the extent of play and timing of the drill. Evaluators and controllers will be stationed at each location where actions will be initiated, where alert signals are controlled, and at the applicable primary notification system facility (facilities). The actual activation of the alert signal may be simulated; however, all activities leading up to activation should be demonstrated and should be completed within the 15-minute time frame. It should be noted that coordination among OROs is normally desirable; however, in the event of a fast breaker situation this coordination is not necessary prior to activation of the primary alert and notification sequence.

All activities for this criterion must be based on the ORO's plans and procedures

and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E. 6, Appendix 3.B.2.c)

Extent of Play. Offsite Response Organizations (ORO) with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location.

Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities

along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the Public Address system will be conducted at some agreed upon location.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Sub-Element 5.b--Emergency Information and Instructions for the Public and the Media

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654 also provides that a system be available for dealing with rumors.

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E. 5, 7; G.3.a, G.4.a, b, c)

Extent of Play. Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as ``the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.'' If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

The Offsite Response Organizations (ORO) should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions to assist the public in carrying out protective action decisions provided to them (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, rumor control telephone number, etc.). The ORO should also be prepared to disclose and explain the emergency classification level (ECL) of the incident. As a minimum, this must be included in media briefings and/or press releases. OROs should demonstrate the capability to use language that is clear and understandable to the public, including tribes, within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is

rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.

If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute press releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and press releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and press releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with rumors. Rumor control staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the rumor control staff, including information that corrects false or inaccurate information when trends are noted, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or press releases.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Evaluation Area 6--Support Operation/Facilities

Sub-Element 6.a--Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.b)

Extent of Play. Radiological monitoring, decontamination, and registration facilities for evacuees/ emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the

extent of play agreement. This would include adequate space for

evacuees' vehicles. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Prior to using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the emergency planning zone (EPZ) population planning base within about 12 hours. This monitoring productivity rate per hour is the number of evacuees that can be monitored per hour by the total complement of monitors using an appropriate monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the twelve-hour requirement can be met. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (e.g., partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

Monitoring personnel should explain the use of action levels for determining the need for decontamination. They should also explain the procedures for referring evacuees who cannot be adequately decontaminated for assessment and follow up in accordance with the ORO's plans and procedures. Contamination of the individual will be determined by controller inject and not simulated with any low-level radiation source.

The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated. The registration activities demonstrated should include the establishment of a registration record for each individual, consisting of the individual's name, address, results of monitoring, and time of decontamination, if any, or as otherwise designated in the plan. Audio recorders, camcorders, or written records are all acceptable means for registration.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-Element 6.b--Monitoring and Decontamination of Emergency Worker Equipment

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. (NUREG-0654, K.5.b)

Extent of Play. The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the Offsite Response Organizations (ORO) plans and procedures. Specific attention should be given to equipment, including vehicles, that was in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment including vehicles based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency with all route markings, instrumentation, record keeping and contamination control measures in place. Monitoring procedures should be demonstrated for a minimum of one vehicle. It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as air intake systems, air filters, radiator grills, bumpers, wheel wells and tires of vehicles, and door handles, as a minimum, should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-Element 6.c--Temporary Care of Evacuees

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross (ARC) under existing letters of agreement.

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. (Found in MASS CARE--Preparedness Operations, ARC 3031) Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h, J.12)

Extent of Play. Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with ARC 3031. In this

simulation, it is not necessary to set up operations as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this objective, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility (facilities). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-Element 6.d--Transportation and Treatment of Contaminated Injured Individuals

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4)

Extent of Play. Monitoring, decontamination, and contamination control

efforts will not delay urgent medical care for the victim.

Offsite Response Organizations (ORO) should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service for an extended time, any vehicle (e.g., car, truck, or van) may be utilized to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the victim may be performed prior to transport, done enroute, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the

process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Dated: June 5, 2001.

Archibald C. Reid III,

Acting Executive Associate Director, Preparedness, Training & Exercises Directorate.

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efforts will not delay urgent medical care for the victim.

Offsite Response Organizations (ORO) should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service for an extended time, any vehicle (e.g., car, truck, or van) may be utilized to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the victim may be performed prior to transport, done enroute, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Dated: June 5, 2001.

Archibald C. Reid III,

Acting Executive Associate Director, Preparedness, Training & Exercises Directorate.

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FEDERAL EMERGENCY MANAGEMENT AGENCY

Radiological Emergency Preparedness: Alert and Notification

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: FEMA is considering whether it should continue to require State and local emergency management agencies to characterize and to identify the appropriate Emergency Classification Level (ECL) when initially notifying the public of incidents at nuclear power plants. We also are considering whether to leave to the discretion of State and local emergency management agencies what, if anything, to say about protective action recommendations. We invite your views on these issues and on any other concerns that you may have about the content of initial notification messages.

DATES: Please submit your comments on or before August 10, 2001.

ADDRESSES: Please submit your comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, or send them by e-mail to *rules@fema.gov.* Please refer to the ''REP Alert and Notification Notice'' in the subject line of your e-mail or comment letter.

FOR FURTHER INFORMATION CONTACT: Vanessa Quinn, Chief, Radiological Emergency Preparedness Branch, Chemical and Radiological Preparedness Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472; (202) 646–3664, or (e-mail) *vanessa.quinn@fema.gov,* or Nathan S. Bergerbest, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., Washington DC 20472, (202) 646–2685, or (e-mail) *nathan.bergerbest@fema.gov.*

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA), through its Radiological Emergency Preparedness program (REP), reviews the emergency response plans of Offsite Response Organizations (OROs), which are the State and local emergency management agencies responsible for responding to incidents involving nuclear power plant. FEMA also conducts exercises to test the capability of OROs to perform in accordance with the provisions of their plans. These activities are undertaken pursuant to FEMA regulations, which appear in Part 350 of Title 44 of the Code of Federal Regulations and a Memorandum of Understanding between FEMA and the Nuclear Regulatory Commission which appears at 44 CFR Part 353, Appendix A.

FEMA recently completed a strategic review of the REP program. In the course of the strategic review, questions were raised regarding what information should be included in the initial message informing the public that an incident has occurred at a nuclear power plant.

FEMA requires that OROs demonstrate their ability to communicate effectively with the public following an incident at a nuclear power plant. We address how this initial notification should be given to the public in several guidance documents. These include the joint *FEMA/Nuclear Regulatory Commission Criteria for Preparation and Evaluation of Radiological Emergency Response Plans* and *Preparedness in Support of Nuclear Power Plants (NUREG–0654/REP–1, Rev. 1),* dated November 1980 [1], FEMA's *Radiological Emergency Preparedness Exercise Manual (REP–14),* dated September, 1991 [2], FEMA's *Radiological Emergency Preparedness Exercise Evaluation Methodology (REP–15),* dated September, 1991 [3] and FEMA's *Guidance for Providing Emergency Information and Instructions to the Public for Radiological Emergencies Using the New Emergency Alert System (EAS),* dated February 2, 1999.[4]

FEMA regulations require that planning standards and evaluation criteria in NUREG–0654/FEMA REP–1, Rev. 1,[5] and the Nuclear Regulatory Commission's emergency planning rule [6] are to be used in evaluating ORO plans and capabilities. While both the Nuclear Regulatory Commission's emergency planning rule and NUREG–0654/FEMA REP–1, Rev. 1 contemplate that initial notification messages will be made in a timely manner, neither prescribe the content of the initial notification message.[7]

[1] Planning Standard F, evaluation criterion E.7

[2] Objective 11.

[3] Objective 11.

[4] Attachment ''B'' to Memorandum for FEMA Regional Directors and Regional Assistance Committee Chairs from Kay C. Goss, Associate Director for Preparedness, Training and Exercises. The attachment can be viewed at *htpp://www.fema.gov/pte/rep/easrep.htm.* (viewed May 30, 2001). This document is referred to as the ''February 2, 1999 Guidance'').

[5] 44 CFR 350.5.

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REP–14 Objectives 11.1 [8] and 11.2, interpret NUREG–0654/FEMA REP–1, Rev. 1 as it pertains to notification messages. Objective 11.1 requires that public notifications reflect official decisions made by responsible public safety agencies. Objective 11.2 requires that the information in these messages be understandable to the public and facilitate initiation of recommended protective actions by the public. Notwithstanding that Objective 11.2 seems to favor non-technical language, the explanatory material for Objective 11.2 suggests that ''the plant status should be described by reference to both the potential for or actual release of radioactivity and the ECL,'' [9] even if no protective action recommendation is made.

On February 2, 1999, the Associate Director of FEMA for Preparedness, Training & Exercises issued guidance indicating that initial messages transmitted through the EAS must contain the following five items:

1. Identification of the State or local government organization and the official with the authority for providing the EAS alert and message.

2. Identification of the commercial nuclear power plant, appropriate [ECL] and current status of radiological conditions at the plant (e.g., no release, potential for release or actual release and wind direction);

3. Call attention to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency.

4. Call attention to the possibility that a protective action may need to be taken by affected populations; and

5. Include a closing statement asking the affected and potentially affected population to stay tuned to [the] EAS station(s) for additional information. This additional information, when necessary could be in the form of a ''Special News Broadcast'' that would, as soon as possible, follow the EAS message.

FEMA is considering a proposal that emerged from the strategic review of the REP program, which would require the following items in the initial message:

1. The information presently required in points 1, 3 and 5 of the February 2, 1999 guidance;

2. Identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant, in place of the information required by point 2 of the February 2, 1999 guidance;

3. Deletion of point 4 of the February 2, 1999 guidance.

The effect of this proposal would be to no longer require that OROs refer to the ECL, characterize the nature of the emergency situation in the initial message or warn the public that a protective action recommendation may be subsequently issued in the initial message.

The proposal does not prevent the ORO from including this information in the initial message, at its discretion, or from using the limited time available in the initial message [10] to provide other information that supports public health and safety objectives. The proposal would not require that the ORO transmit a protective action recommendation in the initial message if none has been formulated or none is immediately warranted. Nor would the proposal in anyway affect the OROs obligation to provide candid information, including a plain language explanation of the situation at the plant, including the ECL, to the news media. It addresses only what information must be disseminated in the initial notification message.

FEMA believes that there may be merit in such a proposal. Some OROs have expressed concern that despite public education campaigns, people outside of the radiological emergency preparedness community are not likely to understand or recall the meaning of an ECL. Concern also has been expressed that the brief characterization of an incident, in a two-minute initial notification, might lead people to take action on their own, prior to and perhaps in conflict with the OROs announced protective action recommendation. We are interested in hearing your views.

Coordination With the Nuclear Regulatory Commission

FEMA conducts the REP program in part under authority of a Memorandum of Understanding with the Nuclear Regulatory Commission. The text of the current Memorandum of Understanding is published in Appendix A to 44 CFR Part 353. Section E of the Memorandum of Understanding provides that the each agency will provide an opportunity for the other agency to review and comment on emergency planning and preparedness guidance (including interpretations of agreed joint guidance) prior to adoption as formal agency guidance. FEMA has transmitted a copy of this document to the Nuclear Regulatory Commission and requested their comments no later than the date upon which the public comment period closes.

Dated: June 5, 2001.

Archibald C. Reid III,

Acting Executive Associate Director, Preparedness, Training & Exercises Directorate.

[FR Doc. 01–14638 Filed 6–8–01; 8:45 am]

BILLING CODE 6718–06–P

[8] REP–14 Objective 11.1 refers to Objective 11, Demonstration Criterion 1. This classification system will be used throughout this notice.

[9] *See,* Page D.11–2 of REP–14 (September 1991).

[10] Initial messages using the EAS may be limited to two minutes in length. See, Background on the Emergency Alert System (EAS) at *http://www.fema.gov/pte/rep/easrep.htm* (viewed June 4, 2001).

[Federal Register: June 11, 2001 (Volume 66, Number 112)]
[Notices]
[Page 31362-31363]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr11jn01-116]

FEDERAL EMERGENCY MANAGEMENT AGENCY

Radiological Emergency Preparedness: Alert and Notification

AGENCY: Federal Emergency Management Agency.

ACTION: Notice.

SUMMARY: FEMA is considering whether it should continue to require State and local emergency management agencies to characterize and to identify the appropriate Emergency Classification Level (ECL) when initially notifying the public of incidents at nuclear power plants. We also are considering whether to leave to the discretion of State and local emergency management agencies what, if anything, to say about protective action recommendations. We invite your views on these issues and on any other concerns that you may have about the content of initial notification messages.

DATES: Please submit your comments on or before August 10, 2001.

ADDRESSES: Please submit your comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, or send them by e-mail to rules@fema.gov. Please refer to the ``REP Alert and Notification Notice'' in the subject line of your e-mail or comment letter.

FOR FURTHER INFORMATION CONTACT: Vanessa Quinn, Chief, Radiological Emergency Preparedness Branch, Chemical and Radiological Preparedness Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472; (202) 646-3664, or (e-mail) vanessa.quinn@fema.gov, or Nathan S. Bergerbest, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., Washington DC 20472, (202) 646-2685, or (e-mail) nathan.bergerbest@fema.gov.

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Dated: June 5, 2001.
Archibald C. Reid III,
Acting Executive Associate Director, Preparedness, Training & Exercises Directorate.
[FR Doc. 01-14638 Filed 6-8-01; 8:45 am]
BILLING CODE 6718-06-P

NOTICE!!

CHANGE IN SAN FRANCISCO LOCATION

The location for the December 2, 1997 REP Strategic Review West Coast At-Large Stakeholder meeting **has been changed to:**

PALACE OF THE FINE ARTS
3301 Lyon Street (at Lyon and Bay Street)
SAN FRANCISCO, CALIFORNIA

The meeting will **begin at 9:30 a.m.** and conclude at 4:30 p.m.

The locations and times for the Central U.S. and East Coast At-Large Stakeholder Meetings remain the same.

Updated: November 24, 1997

September 12, 1997

REP Program Strategic Review Steering Committee

Concept paper: Delegated State

ISSUE

Can a structured program within which States are delegated exercise evaluation responsibilities traditionally performed by FEMA be developed such that reasonable assurance can continue to be assured and efficiencies through streamlining achieved?

In any restructured REP program, FEMA must continue to provide the NRC with its determinations on reasonable assurance unless there is a change in NRC regulations (10 CFR 50.47). This regulation, however, does not specifically state how FEMA will make reasonable assurance determinations. The operative question is the method of gathering information which FEMA uses to make these site-specific reasonable assurance findings. The current method is outlined in 44 CFR 350 and the FEMA-NRC Memorandum of Understanding.

Reasonable assurance findings are comprised of two components:

1. FEMA must determine that plans and preparedness are adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency.

2. FEMA must determine that plans and preparedness are capable of being implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment adequacy.)

BACKGROUND

In an effort to restructure the FEMA REP program to make it more efficient and effective, during the initial SRSC meeting, a working group was tasked to explore the feasibility of

FEMA modeling the REP program on aspects of the NRC agreement State program.

Members of the SRSC pointed out that several other Federal agencies/departments have programs which are implemented by the States with oversight provided by the Federal government. In addition to the NRC Agreement State program, examples are: the EPA permitting programs for the Clean Air and Clean Water Acts; the OSHA safety and health program; the USDA meat and poultry inspection program; and the FDA mammography program.

ANALYSIS/DISCUSSION

Basic Program Outline

1. Under a Delegated State Program, FEMA would continue to make site-specific reasonable assurance determinations and provide those findings to the NRC.

2. States would apply to become Delegated States on a voluntary basis and FEMA would review and approve (or deny) such requests.

3. A Delegated State would assume responsibility for exercise evaluation and provide a detailed Annual Letter of Certification (ALC) each year.

4. FEMA would provide a limited oversight role to the State's activities which would include supplemental verifications and review of the ALC.

A discussion of Impact is included in Appendix 1, and a summarization of the NRC Agreement State Program is included in Appendix 2.

Recommended Application Process

The Delegated State Program would be a voluntary program, but 44 CFR 350 approval would be required of States that apply. By definition, this approval means that reasonable assurance exists regarding a State's capabilities. Requiring 350 plan approval for each entrant to the Delegated State program provides a common foundation for all applicants. Such a requirement further lends a tangible benefit to obtaining a 350 plan approval. FEMA should work with States that are interested in obtaining 44 CFR 350 approval for the purpose of gaining Delegated State status.

NUREG-0654/FEMA-REP-1 would continue to be the basic guidance document for the REP program, for both Delegated States and other REP States. Thus, a State's adherence to NUREG-0654/FEMA-REP-1 and having plans consistent with it would remain unchanged.

To initiate the process, the Governor, or designee, would request approval to be a Delegated State from FEMA. The State would have to meet certain criteria outlined by FEMA for participation. The original application could include:

1. a commitment to use REP 14/15 (or the applicable variant endorsed by FEMA),

2. an exercise/drill schedule in conformance with NUREG-0654/FEMA-REP-1, Planning Standard N,

3. a commitment to use a standard exercise report format,

4. a commitment to hold a public meeting in the vicinity of the plant to discuss exercise results following a full-scale exercise,

5. a discussion of the corrective action program to resolve drill and exercise deficiencies (i.e., inadequacies which directly affect the health and safety of the public) within 120 days (Note: It may be useful for FEMA to compile multiple examples of deficiencies and areas requiring corrective action (ARCA) for use by Delegated States in an attempt to achieve consistency among them),

6. a commitment to maintain plans and procedures in conformance with NUREG-0654/FEMA-REP-1, Planning Standard P,

7. a commitment to use a standard format for the Annual Letter of Certification,

8. information regarding the appropriate level of staffing and training for evaluation of exercises,

9. a statement that in-state coordination has occurred among stated departments, including emergency management, radiological health (responsible for dose assessment/projection), and other jurisdictions within the 10 mile EPZ, and

10. a commitment to apply exercise credit consistent with FEMA's policy (see discussion later in paper).

Past performance could also be considered in granting Delegated State status. For example, there should be no outstanding exercise deficiencies at the time of the application to the program and an acceptable Annual Letter of Certification should have been submitted for the previous year.

Based upon FEMA's approval of the State's proposal, a State would be designated a

Delegated State. If there is a shortfall in the application package, FEMA would identify it to the State and provide assistance in improving the shortfalls.

Program Implementation

Once the State receives approval, it would begin its own planning for conducting and evaluating its own exercises. No extent-of-play agreements would need to be negotiated with FEMA. Each year, the State would be required to provide an ALC with details on completion of periodic requirements and changes to the program. The ALC would also contain the exercise report with issues explained and discussion of corrective actions taken. A standard ALC format would be required for all Delegated States, perhaps requiring an update to Guidance Memorandum PR-1.

The ALC with cover letter from the appropriate State official would become the non-exercise vehicle for documenting compliance with periodic requirements and continued reasonable assurance. The appropriate State official would certify in each ALC cover letter that (1) reasonable assurance continues to exist, (2) there has been no loss of the ability to meet planning standards, and (3) the program does not contradict any regulatory requirements. These assertions would be based on compliance with periodic requirements, correction of exercise issues, and/or no programmatic changes that affected reasonable assurance, and this basis would be provided in the ALC.

In examining the ALC, FEMA could rate each function as outlined in the ALC (defined in Section C, page 8, of Guidance Memorandum PR-1, "Policy on NUREG-0654/FEMA-REP-1/FEMA-REP-1 and 44 CFR 350 Periodic Requirements," or its revision). Suggested ratings could be acceptable, acceptable with recommendations for improvement, or unacceptable. Once each function is rated, there would be an overall finding provided on reasonable assurance.

The reasonable assurance finding could be described in one of three ways: (1) reasonable assurance exists (consider decreasing verification frequency; State continues to evaluate its own exercises), (2) reasonable assurance exists but program needs improvement (State continues to evaluate its own exercises), or (3) reasonable assurance does not exist. FEMA's review of the ALC would determine whether followup discussions are required with the State as REP partners. In the latter instance, the State would develop improvement strategy/tactics in cooperation with FEMA, NRC, and other cognizant RAC agencies to upgrade its program with timing consistent with 44 CFR 350 to reestablish reasonable assurance. FEMA could perform an oversight role by assisting in evaluation at the next exercise to ensure program adequacy. If the deficiencies are severe enough or not appropriately corrected, FEMA could take other action up to and including removing delegated State status.

These findings could be made using in-house staff with assistance from appropriate FRPCC agencies and with minimal contractor support for technical areas. FEMA would need to ensure consistency in REP regional staff review.

The ALC would also contain the changes to the State's and locals' plans. (These changes are required to be submitted by 44 CFR 350, Section 350.14(c) and (d).) In this way, FEMA would remain aware of how plans are evolving and allow FEMA to provide any needed overview in this regard.

Delegating the Evaluation Function

The primary function that would be delegated and which is central to the Delegated State program is the evaluation function. The basic premise would be that States would evaluate their own exercises utilizing the current FEMA-endorsed methodology (e.g., a revised REP 14/15 or applicable variant endorsed by FEMA). In doing their own evaluations, States could utilize other State and local personnel as their evaluators as long as these persons meet the evaluator criteria defined for the program. States may also request supplemental assistance by FEMA if they desire; FEMA participation would be based on its interest and availability. The program may also contain provisions that FEMA provide a small cadre of evaluators to observe an exercise or assist in evaluation based on lack of reasonable assurance arising from earlier exercise findings.

Any evaluation methodology utilized by a State would require trained evaluators and an exercise report (e.g., the SERF as potentially modified for Delegated States) that describes issues identified and proposed corrective actions.

Evaluated aspects of the REP program would be included in delegated responsibilities even if done out of sequence from a regularly scheduled exercise (e.g., medical drills or alert and notification tests).

Delegated State Program and Credit Policy

A recommendation resulting from the Strategic Review may be that FEMA implement a standard national policy outlining under what circumstances responses to actual events can be granted credit for REP-required activities. Delegated States following this to-be-developed national credit policy would be permitted to apply it to their exercises. States would document an after-the-fact discussion of how they applied the credit policy as part of their ALC submittal. (The original application package would also include a commitment to adhere to the national FEMA credit policy.) FEMA, in its review of the ALC, would have an opportunity to review the use of the credit policy. Any questions could be addressed to the State. If FEMA identifies inadequacies in the application of the credit policy, FEMA could opt to require some remedial action.

Supplemental Verifications by FEMA of Aspects of Delegated State Programs

FEMA may opt on a two- to three-year basis to verify limited portions of a Delegated State's program. Potential areas for verification include:

1. the training plan for responders to ensure conformance with NUREG-0654/FEMA-REP-1, Planning Standard O,

2. the drill/exercise evaluation plan (e.g., evaluator locations, source of evaluators) and methodology which utilizes REP 14/15 (or its revision),

3. the plan and procedure maintenance program in conformance with NUREG-0654/FEMA-REP-1, Planning Standard P,

4. the roster of key staff for each responding offsite response organization, and

5. periodic visits to assess facilities, equipment, and training.

This aspect of the program could be tailored such that States with positive performance history could have verifications performed less frequently than other States and conversely those not performing as well as could have verifications performed more frequently.

Financial Issues

REP program funding is provided by utilities in the form of user fees to FEMA. In the Delegated State program, funding could be modified such that (1) FEMA passes through some of this money which could be earmarked for the REP program in Delegated States to the Delegated States or (2) the utilities provide money directly to the States which could have been provided to FEMA otherwise. Option (1) may not be a viable option because if the amount of money provided to FEMA by utilities is based on the amount of REP hours spent on a particular facility, the number of FEMA REP hours could decrease in a Delegated State. Therefore, FEMA would not have the REP money to pass through to the State.

REP and the Performance Partnership Agreement (PPA)

Inclusion of the REP program in a State's PPA for a Delegated State could remain optional analogous to the current option of States to either include or not include their REP program into the PPA. Therefore, the Delegated State choice would not affect the State's choice regarding including REP in its PPA.

Non-Delegated States

States other than Delegated States would continue to be evaluated by FEMA in a revised REP program. FEMA would continue to evaluate the State offsite exercises and produce the exercise report with recommendations to correct identified weaknesses. Non-delegated states would require a similar level of effort as currently expended by FEMA to assess reasonable assurance. If a non-delegated State did not submit an ALC, FEMA would have to collect data which would normally be included in an ALC (now typically done when State performance is an issue).

Advantages of the Delegated State Program

Assuming the proper controls are in place, what could be advantages to the States for FEMA to offer a Delegated State Program?

1. States would have much greater flexibility in conducting their radiological emergency preparedness program. Once the State meets specific criteria and is designated a Delegated State, it would still be responsible for offsite preparedness. However, their methods and procedures would not be prescribed by FEMA (beyond basic program requirements). Therefore, Delegated States would have greater control over how they implement the REP Program. Delegated States could focus more on results. The Delegated State Program provides the possibility for flexibility in exercise evaluation (no Federally-negotiated extent of play agreements) and correction of exercise issues (not responding to FEMA recommendations). Delegated States would have more ownership of the program.

2. One of the conditions for Delegated State approval could be that the site must have been granted 44 CFR 350 approval. This could be a minimum threshold indicative of FEMA having completed and accepted a review of their plans. Therefore, the 44 CFR 350 approval process could take on greater importance and more States may be interested in seeking this approval.

3. The Annual Letter of Certification would take on increased importance as the primary document FEMA would review to assess reasonable assurance. The Delegated State would be required to submit the ALC documenting exercise evaluation and other aspects of their program.

4. The Delegated State program could reduce FEMA resources needed for the REP program because those Delegated States would be doing their own exercise evaluations. This could be a significant streamlining of the REP program and associated resources while allowing a greater level of REP staff assistance and REP policy work.

5. In a Delegated State program, the individuals most knowledgeable about a program would be evaluating it. This could be a significant advantage in terms of program efficiency and identification of meaningful findings (as well as ownership of those findings).

Potential Disadvantages of a Delegated State Program

1. States would be evaluating their own programs and thus evaluating themselves. If not properly implemented, this could be detrimental to the REP program.

2. States would not have ready access to FEMA experience and knowledge. (Although an increase in staff assistance may alleviate this disadvantage.)

3. Without additional funding, State resources may not be sufficient to implement a Delegated State program.

4. FEMA could be administering a "dual system" including delegated and non-delegated states.

Pilot Program

Because of the significant change envisioned by the Delegated State concept, a pilot program would be implemented. Lessons learned from the pilot program would determine if and how the Delegated State program would be fully implemented.

Appendix 1

Impact

If the model of the NRC Agreement State program (or other similar Federal agency program) is adopted ***in whole or in part***, FEMA's oversight role in the REP program could change significantly. Roles of the FEMA headquarters and regional REP staff, and States would be redefined. Additional training would probably be required at all levels.

Should the Agreement State model be adopted, ***in whole or in part***, it is likely that numerous guidance documents would need revision as well as 44 CFR 350 and the NRC-FEMA MOU.

As with the NRC Agreement State program and other similar Federal programs, there is potential that some States, by not having 350 approval for all or some plans (i.e., those with

interim findings), would not become REP "Agreement States," thus there would need to be a parallel REP program administered by FEMA for those States (or sites because 350 approval is site specific).

Appendix 2

Summary of NRC Agreement State Program

Authority

The NRC Agreement State program is legislatively authorized by the Atomic Energy Act, as amended. The OSHA, EPA, and USDA programs are also legislatively authorized.

NRC Agreement State Program

The NRC program is designed to relieve the NRC of regulating certain classes of radioactive materials licenses among Agreement States. States voluntarily submit their programs for Agreement State status (voluntary submission is also found in the OSHA and Clean Water Act programs). In Agreement States, the States issue licenses, assess fees to licensees, and inspect licensees. Regulation of nuclear power plants is not included in the Agreement State program. In those States which are not Agreement States, the NRC regional office regulates the licensees. The NRC does not provide funding to Agreement States and in some cases will charge an Agreement State for technical assistance. The NRC Agreement State program is not a delegated program, that is, the NRC "cedes" its regulatory authority. Funding is not provided the Agreement States, training is not funded and is only provided on a space available basis in NRC courses. OSHA and EPA differ in that they do provide some funding, specific direction to their programs, and training.

Program Characteristics

How does a State become an Agreement State? This is a voluntary program. States must have a "compatible" (with NRC standards) and "adequate" (to protect public health and safety) radiation control program. This includes State statutes, regulations, and trained staff. The NRC reviews the State program and, if approved, there is a signing ceremony and phased-in State regulation.

Number of NRC Agreement States: There are currently 29 NRC Agreement States. This represents approximately 15,000 radioactive materials licenses, which is about 70 percent of all the radioactive materials licenses issued in the United States.

Advantages of Agreement State status:

1. fulfills intent of Atomic Energy Act, as amended

2. State radiation control agencies have the option to regulate almost all radiation & resources normally regulated by the NRC (except nuclear power plants)

3. Regulatory agency is closer to licensees and can generally be more responsive to licensees

4. enhances core of knowledgeable persons at State level

5. single regulatory agency for most users

6. in general, fees charged to licensees are lower

7. decreased requirements placed on NRC

Disadvantages of Agreement State status:

1. States must fund program administration

2. some licensees may still be subject to more than one regulatory agency

3. requires coordination between NRC and States

4. requires parallel program administered by NRC in non-agreement States

Methods of NRC Oversight

The NRC maintains oversight using the following methods:

1. NRC approves new Agreement States

2. Assesses compatibility and adequacy of Agreement States periodically, using the Integrated Material Performance Evaluation Program (IMPEP). This is a team (a national cadre which includes both Federal and State staff) which performs evaluations of the program periodically (anywhere from 2-4 years - based on past performance record of the state). NRC has developed measurable performance indicators related to 5 areas: status of materials inspection program, technical staffing and training, technical quality of licensing actions, technical quality of inspections, and response to incidents and allegations.

3. Exchanges regulatory and safety information with Agreement States, e.g., telephone, conferences, correspondence, workshops)

4. provides technical assistance, as deemed appropriate (there are some cases where the NRC will charge the Agreement State for this service)

5. trains State personnel on a space available basis

Other Federal programs similar to the NRC Agreement State program use similar means to provide oversight (e.g., review/approve plans, on-site visits, review various state reports).

Possible Application of Agreement State Concept to FEMA REP Program

Most states have voluntarily submitted their plans for 350 approval. Such approval would be a prerequisite for entry to the "Agreement State" program. Of the 69 sites, there are currently only 12 sites for which a State does not have 350 approval. Those sites are:

Vermont Yankee
Limerick
Seabrook (MA.)
Three Mile Island
Pilgrim
Susquehanna
Artificial Island (NJ)
Diablo Canyon
Beaver Valley (PA)
San Onofre
Peach Bottom
WNP-2

These sites without 350 approval (interim findings) would be evaluated by FEMA in a parallel program. FEMA would evaluate all exercises and produce the report with recommendations to correct identified weaknesses. FEMA would increase its role in monitoring State programs which do not have 350 approval (i.e., actually document first-hand State compliance with periodic requirements).

There are certain aspects of the current FEMA REP program which could possibly be used to restructure the REP program along the lines of the NRC Agreement State program and other similar Federal programs. However, there is a significant difference between the REP Program and the other agency programs. The other agency programs involve State oversight of third parties, like hospitals, private industries, etc., not the States themselves. If FEMA were to relinquish some of its REP authority to the states, the States would

essentially be monitoring themselves. This distinction needs to be kept in mind when examining parts of the REP program that could be devolved to the states.

Updated: November 13, 1997

PREPAREDNESS

September 12, 1997

REP Program Strategic Review Steering Committee

Concept Paper: Exercise Streamlining

ISSUE

In July 1996, a Federal Register notice announced the strategic review of FEMA's Radiological Emergency Preparedness (REP) program and requested comments. A majority of the comments received indicated that the stakeholders and customers in the REP program are not satisfied with FEMA-REP 14 (REP Exercise Manual) and REP-15 (REP Exercise Methodology). Furthermore, the respondents indicated that the application of current documents is not uniform and consistent during REP exercise evaluations and that the current sets of EEMs and FEMA-REP-14 should be revised.

BACKGROUND

The foundation for REP exercises can be located in 10 CFR 50 and 44 CFR 350, 351, and 352, and the NRC and FEMA Memorandum of Understanding (MOU) dated June 17, 1993, which is in 44 CFR 353.7, Appendix A. According to 10 CFR 50, Appendix E, a "Full Participation" exercise is defined as the testing of the major observable portions of the onsite and offsite emergency plans and the mobilization of State, tribal, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. 44 CFR 350, section 350.9, subparagraph (a) indicates that a joint exercise (onsite and offsite) with full participation of appropriate State and local government authorities and the licensee would be conducted. The 1993 MOU, Section II, 2. (2) states that the purpose for an exercise is to provide reasonable assurance that the plans can be implemented. Section III, paragraph C of the MOU discusses the preparation for and evaluation of joint exercises, but does not elaborate on methodology. The only mention of FEMA-REP-14 is to indicate the schedule for issuance of exercise reports. 44 CFR 350, section 350.13, (a) (2) states that the basis used for reviewing both plans and

exercises is NUREG 0654/FEMA/REP-1, Rev.1. It is noted that the sixteen (16) planning standards of NUREG-0654 are contained in both 44 CFR 350 and 10 CFR 50.

To clarify what constituted an exercise, and to develop a standardized evaluation methodology, FEMA issued Guidance Memorandum EX-3 in February 1988. This document provided guidance on the REP exercise process and introduced a set of 36 standard exercise objectives. The 36 exercise objectives were based on the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Revision 1 and Supplement 1.

Based on these exercise objectives, the original Exercise Evaluation Methodology (EEM) was issued in May 1988 as an interim-use document. The 1988 edition of EEMs was developed as an objective-driven exercise evaluation instrument to replace the modular format issued in August 1983.

Comments were requested from FEMA Regions, states, local governments, NRC licensees, and other Federal agencies for the refinement of the EEMs. Based on the comments received, FEMA revised and issued FEMA-REP 14 and REP-15 in September 1991. This refinement included a reduction to 33 exercise objectives. These 33 objectives were meant to represent a functional translation of the planning standards and evaluation criteria of NUREG-0654 that could both be demonstrated and observed during REP exercises. In addition, many elements of various GMs that had been issued by FEMA were incorporated into both REP-14 and REP-15.

ANALYSIS

The following discussion is based on the current REP guidance for exercise evaluation. It also identifies several new methods to confirm the existence of reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of a nuclear power plant in the event of a radiological incident. The purpose is to identify an acceptable approach to streamlining the exercise evaluation process and supporting guidance. The concept paper also identifies additional methods, that if used in conjunction with exercise evaluation, could also be used to establish and/or confirm that reasonable assurance is being maintained. Some of the approaches that may be considered are: concentration on a "results oriented" evaluation process, concentration on objectives that are radiological in nature, expanded use of the Annual Letter of Certification (ALC), verification of ALCs through the use of random inspections, development of a more flexible credit policy for participation in other natural hazard exercises and for response to real incidents, etc. These and other approaches are addressed in more detail in the Discussion section of this concept paper. The SRSC did not want to give the impression that, at this point, the resulting exercise guidance and evaluation

methodology would be interpreted as a revision to REP-14/15, since it might take an entirely different form. Thus the paper is titled Exercise Streamlining.

DISCUSSION

1. **FEMA-REP-14 and 15 should be revised to support a "results oriented" exercise evaluation process.**

   At the present time, exercises are evaluated in an "objective based" format with a methodology that includes a sizeable number of Points of Review that must be satisfactorily demonstrated to successfully meet the requirements of the objective. This system is very structured and leaves little latitude for satisfying the objective by alternate means. "Results oriented" exercises allow the players to complete an activity without following a specific checklist. This approach will provide the exercise players much more latitude to reach the desired results. It will also allow state and local government

   the flexibility to concentrate training activities in the areas where responders feel additional reinforcement is needed.

   Evaluators will then concentrate on the results of exercise participation, not the means to reach a result. If a player uses an alternate means to complete a task and there is no negative effect because of this, there should not be an exercise issue.

2. **Concentrate more on radiological aspects of REP and less on "All-Hazards" response aspects. Therefore, unnecessary objectives and Points of Review could be eliminated.**

   Recommendations have been made to streamline the REP Exercise Program to concentrate more on specific radiological aspects of REP and less on the "All-Hazards" aspects. Currently, REP-14 and REP-15 contain several objectives and Points of Review, which are designed to evaluate portions of an offsite response organization's overall preparedness and response capability. Some of these objectives and points of review focus on response procedures and capabilities which are applicable to any type of emergency such as fires, chemical spills, flooding, tornadoes, and other natural or technological hazards. Yet, it is conceded that jurisdictions with REP programs are better prepared than most to meet the demands of other disaster events.

   Some specific areas of REP-14 and REP-15 that focus on "All-Hazards" response

procedures and capabilities are: Objective 1, Mobilization; Objective 2, Facilities and Equipment; Objective 3, Direction and Control; Objective 4, Communications; Objective 17, Traffic and Access Control; Objective 19, Congregate Care; Objective 30, 24-Hour Staffing; Objective 32, Unannounced Exercise; and Objective 33, Off-Hours Exercise. Many of the Points of Review (PORs) evaluated within these objectives involve activities that are routinely conducted by emergency responders during various non-REP disaster responses or exercises. Therefore, some of these PORs, and in some cases objectives, which are not REP-specific could be eliminated from the REP exercise evaluation process. However, the objectives would still need to be evaluated by some other means.

3. **Several objectives and Points of Review (PORs) are closely related; REP-14 and REP-15 could be streamlined by combining similar objectives and PORs.**

   Comments from numerous state and local, utility, and federal organizations have indicated a desire to streamline REP-14 and REP-15 objectives. Obvious similarities between objectives and repeated experience in exercise evaluations provide strong evidence that several objectives can easily be combined without harming the evaluation process. By combining objectives, duplicate points of review, and in some cases, entire objectives may be eliminated. The evaluation document will become less prescriptive and more supportive of the outcome based approach (see 1. Above).

   Some examples of objectives which should be combined are: Objectives 1 (Mobilization) and 30 (24-Hour Staffing); Objectives 2 (Facilities), 3 (Direction and Control), and 4 (Communications); Objectives 5 (Exposure Control) and 14 (KI); Objectives 6 (Ambient Monitoring) and 8 (Airborne Radioiodine Monitoring); Objectives 11 (Public Instructions), 12 (Media Information) and 13 (Rumor Control); Objectives 15 (Special Populations) and 16 (Schools); and Objectives 18 (Reception Center) and 22 (Emergency Workers).

4. **FEMA-REP-14 and REP-15 must be updated to include/reflect numerous changes in Federal guidance which have occurred since publication of the documents and to resolve inconsistencies with other guidance.**

   Subsequent to the publication of FEMA-REP-14 and 15 in September 1991, several major changes in Federal guidance have occurred which significantly impact the REP program. FEMA-REP-14 and 15 must be updated to ensure that they are current and consistent with other Federal regulations and guidance.

   Some examples of changes which are required for REP-14 and 15 include: update to

reflect the Emergency Alert System (EAS) and the use of "Special News Broadcasts"; update to ensure consistency with the current EPA 400 Manual of Protective Action Guides; and to reflect the current philosophy of using "Total Effective Dose Equivalent (TEDE)" to determine radiation exposure.

5. **The required demonstration frequency of objectives should be reevaluated. Some objectives should be demonstrated more frequently and others less frequently.**

    a. Several comments regarding the Strategic Review have indicated a desire for more frequent demonstration of Relocation, Re-entry, and Return and Ingestion Pathway objectives (Objective numbers: 23, 24, 25, 26, 27, 28, and 29). As these objectives represent a significant portion of the response process, increasing the demonstration requirements to something more frequent than every six years is advisable. This may be a misunderstanding of the intent of the guidance. Currently the requirement calls for the demonstration of ingestion and recovery functions at a minimum, every six years. The state and local government officials may choose to demonstrate these functions more often if they choose.

    One concept presented is to have an option to start the exercise at the post emergency phase (Recovery and Ingestion) thus eliminating the emergency phase. This would allow full concentration by the players on the Relocation and Ingestion objectives. This option could be supported if there has been a series of successful Emergency Phase exercises.

    There are several objectives that could be demonstrated less frequently than the current guidance requires. One example is to require the evaluation of Medical Drills every two years instead of annually.

6. **FEMA-REP-14 should contain additional guidance concerning out-of-sequence evaluations.**

    a. It is possible to perform numerous exercise demonstrations out-of-sequence from the biennial exercises. Out-of-sequence demonstrations may be scheduled during the non-exercise year, other times during the exercise year, and/or another day during the exercise week.

    Examples of some facilities or functions that may be conducted out-of-sequence include:

1. School drills should be conducted during the school year. Exercises are conducted many times when schools are out of session. This drill could be evaluated out of sequence to the full-scale exercise, during the school year.

2. Medical Services drills are currently conducted out of sequence most of the time. The current requirement to demonstrate once every year may be relaxed. (See MS-1 paper).

3. Reception/Mass Care demonstrations may be more beneficial to the players and the schools if these evaluations were conducted outside of the exercise. The FEMA evaluator and jurisdiction staff could visit all school facilities to be used as mass care centers. The county officials/players can provide a schematic of the monitoring/decontamination area of the school. The FEMA staff person may be able to offer constructive ideas to improve the layout. Once a reception/mass care center has been visited and evaluated, there should not be a need to revisit the same center until centers are changed (or if there have been physical changes to the facility). The abilities of the monitoring and decontamination teams staffing the reception/mass care centers during an incident would need periodic evaluation, either during the scheduled exercise or out-of-sequence, at the county or at places of employment. There is no need to evaluate staffing and running of these centers since they are normally activated for all-hazard disasters. See Credit under Discussion Item No. 8.

4. Other activities that may be evaluated out-of-sequence include:

    a. Nursing Homes
    b. Correctional Centers
    c. Radiological Laboratories
    d. Ingestion Pathway Field Teams
    e. Traffic and Access Control
    f. Dose Calculations for Recovery and Ingestion Phases
    g. Monitoring and Decontamination Facilities

5. It may be possible to play the Plume Phase of an Ingestion exercise out-of- sequence. The Plume Phase could stop with the protective actions and the Ingestion phase could be conducted up to several months later beginning with the general emergency and protective actions. This was done as a pilot study and as a tabletop ingestion

exercise.

b. Evaluators should provide direct feedback to exercise participants immediately following the exercise. These "critiques" should not attempt to detail the seriousness of any inadequacies observed, but should allow the evaluators to provide positive feedback and general recommendations for improvement.

c. Immediate correction of issues identified should be allowed following completion of the exercise. For example, if inappropriate monitoring techniques were demonstrated, the evaluator could provide instruction on proper monitoring and then allow for immediate re-demonstration. The issue would be documented as an Area Requiring Corrective Action (ARCA) in the Standard Exercise Report Format (SERF), with the appropriate statement documenting the completion of corrective action.

7. **There are additional objectives that could be satisfactorily demonstrated by response to an actual emergency or other hazard exercises.**

At the present time, FEMA-REP-14 and 15 indicate that demonstration of objectives 32 and 33, unannounced and off-hours exercises and drills, may be satisfied by a response to an actual emergency. However, there are other objectives that, although there are some radiological aspects to them, contain major generic emergency operations for which credit could be granted. The objectives identified below are demonstrated during any disaster response. Objectives that could qualify for credit are:

Objective 1 (Mobilization)
Objective 2 (Facilities)
Objective 3 (Direction and Control)
Objective 4 (Communications)
Objective 12 (Media Information)
Objective 13 (Rumor Control)
Objective 15 (Special Populations)
Objective 16 (Schools)
Objective 17 (Traffic and Access Control)
Objective 19 (Congregate Care)
Objective 20 (Medical Services - Transportation)
Objective 21 (Medical Services - Facilities)
Objective 23 (Supplementary Assistance)
Objective 30 (24-Hour Staffing)

Objective 31 (Offsite Support for Onsite Personnel)
Objectives 32 and 33 (Unannounced and Off Hours Exercises and Drills).

8. **Alternative approaches that can be used in conjunction with a streamlined exercise to demonstrate and confirm reasonable assurance.**

   All nuclear power plant sites currently have findings of reasonable assurance that have been confirmed in numerous exercises since the initial determination. The proposed exercise streamlining position paper allows for other, alternative approaches to be used, in combination with a streamlined full participation exercise, to demonstrate and confirm reasonable assurance. Discussed below are traditional components of a full-participation exercise that can be evaluated in an alternate way outside of the exercise. Other approaches may include, but are not limited to, the following:

   - **Staff Assistance Visits**

     a. States and Utilities conduct many different training sessions during the year. FEMA staff could attend these sessions and provide immediate feedback to the attendees. FEMA would be providing on the spot feedback rather than identifying issues in an evaluation report. This approach would build a better relationship among REP partners and stakeholders (See Partnership Paper).

     b. States and Utilities are required to conduct a variety of drills during the year. If FEMA staff were to attend the drills, such as, communication drills, etc., evaluation of these activities could be included in the final exercise report. Again, this would result in some cost during work hours or evenings; however, it would reduce the cost of evaluators/ contractors during full-participation exercises.

     c. Personal interviews with players can be used in staff assistance visits, training sessions, and out-of-sequence drills, to verify credit for objectives demonstrated during other activities, etc.

   - **Out of Sequence Demonstrations (See Discussion Item 6).**

   - **Credit for Actual Events or Exercises Including Non-Radiological Events.**

     Many REP objectives are demonstrated all the time during natural disasters

and exercises for other hazards. The following list identifies those exercise objectives for which we should allow credit:

a. Mobilization, Objective 1, during any emergency this objective is demonstrated. In addition, most emergencies involve 24-hour staffing (Objective 30). Therefore, both objectives could be given credit. These two objectives could be merged into one objective.

b. Facilities, Objective 2, especially those fixed facilities that we see during every exercise. (EOCs, Mass Care Centers, etc.)

c. Direction and Control, Objective 3, the areas not involved in radiological decisions.

d. Communications, Objective 4, we should see communications during any exercise. Often communications is the first thing that fails in a disaster. All communication equipment and backup systems will be used during any response activities. If documented appropriately, credit could be given for this objective.

The personal interview with players will be important in technical assistance visits, training sessions, and out-of-sequence drills, to verify credit for objectives demonstrated during other activities, etc.

For additional objectives, please see Discussion Item 7 under FEMA REP 14-15 Analysis.

- **Annual Letters of Certification**

The Annual Letter of Certification (ALC) is the perfect tool for state and local government to document self-assessments. Already, annual public information requirements, training completions, siren operability and maintenance verifications are submitted through this document. The ALC is certified by the Governor or his designee as to its accuracy. It could be expanded very easily to include information such as the following:

a. Monitoring equipment maintenance and calibration dates.
b. Dosimeter operability and maintenance records documentation.
c. KI requirements and shelf life.
d. Communications drill results.

e. Plan updates
f. Evaluation Reports

Verification of the documentation submitted in the ALC may be accomplished by site-visits.

a. There are several objectives geared to the verification that appropriate equipment is available for emergency workers. Potassium Iodide (Objective 14) calls for the evaluator to confirm that sufficient doses exist to be given to all emergency workers and institutionalized individuals. This process could be verified during a site visit by REP staff during normal duty hours. Contract evaluator costs would be cut; however, additional costs could be incurred for additional travel, etc. as this would be done outside the exercise process.

b. Monitoring equipment and dosimetry operation/maintenance verification is required on a regular basis (See FEMA Rep 14-15). Inspections of this equipment outside the exercise timeframes can easily be accomplished. FEMA Regional staff would save money by performing these inspections during regular work hours, when maintenance is being performed on the equipment. Although, there would be some cost for FEMA staff there would be a cost saving by reducing the amount of evaluator/contractor time during exercises. Also, see Annual Letters of Certification and Out-of-Sequence Demonstrations.

- **Self-Assessments**

For those states where local jurisdictions are required to play, state evaluators could be utilized for those jurisdictions below the county level. The one problem with this approach is staffing. Many states may not have the resources necessary to perform this function. There may be other areas where state evaluation may be viable. When evaluations are performed by a state, response capabilities should be documented and provided to FEMA.

RECOMMENDATIONS

To be determined.

SAMPLE GUIDANCE AND EVALUATION MANUAL FOR RADIOLOGICAL

EMERGENCY PREPAREDNESS EXERCISES

Updated: July 7, 1998

SAMPLE

GUIDANCE AND EVALUATION MANUAL FOR RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISES

STATEMENT FROM THE REGIONAL ASSISTANCE CHAIRPERSONS ADVISORY COMMITTEE

The Regional Assistance Chairpersons Advisory Committee (RACAC) was charged by the Strategic Review Steering Committee (SRSC) to prepare an example of streamlining several objectives from FEMA REP 14/15 to be presented with the Streamlining Concept paper. The RACAC prepared this document to illustrate an approach to the rewrite/change of existing exercise guidance and evaluation material. The committee recognizes that there are other approaches including leaving REP 14/15 in their current form (with modifications necessitated by changes in other supporting documents); or altering current format to reduce unnecessary objectives (such as 30, 32, 33) and modifying each remaining objective based on customer responses to the strategic review, or to generate a totally new document. The attachment is a representation of an approach to this process.

OBJECTIVE X: RADIOLOGICAL EXPOSURE CONTROL
(Formerly Objectives 5, 14 and 29)

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers, and the capability and resources to implement protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

INTENT

This objective states that OROs shall be able to determine the radiation exposure received by emergency workers; provide for distributing, collecting, and processing of direct-reading dosimeters (DRD) and non-direct-reading dosimeters; provide for emergency workers to read their DRDs at appropriate intervals; maintain a radiation dose record for each emergency worker; and establish a decision chain or authorization procedure for emergency workers who are required to incur radiation at levels greater than routinely authorized emergency exposure limits. This objective should be evaluated in concert with Objective A, Radiological Protective Actions; Objective C, *Radiological Field Monitoring and Sampling*; Objective E, Radiological Monitoring and Decontamination; Objective F, *Radiological Laboratory Operations*; and Objective G, *Radiological Medical Response*. (See Eevaluation criteria from NUREG-0654 planning standards E, H, J, and K).

Whenever the plan requires, sufficient quantities, storage, and means for distributing radioprotective drugs to emergency workers, institutionalized individuals, and the general are available.

For assigning DRDs, emergency workers are categorized according to whether they will be working in an area of potentially high exposure rates (Category 1), or in an area of potentially low exposure rates (Category 2). Areas inside the plume EPZ are considered to be in Category 1. It is essential that emergency workers with assignments in this area have a means for measuring their radiation exposure at the beginning of the accident response.

Emergency workers assigned within categories 1 and 2 include all those whose services are needed to protect the health and safety of the general public during an emergency. These workers may be exposed to radiation from an airborne plume or from material deposited during a plume passage during their missions. Therefore, a means for measuring their radiation exposure be available at the beginning of the accident response. Individuals returning to restricted areas for necessary work (e.g., farmers feeding animals) are assigned to Category 2. (See evaluation criteria from Planning Standards E, H, J, K, and M.)

EXTENT OF PLAY

Under this objective, all activities are to be carried out using plans and procedures as in an actual emergency unless otherwise specified in the extent-of-play agreement.

DEMONSTRATION CRITERIA

NUREG CRITERION 1

H.10, K.3., J.10.e,f

OROS have dosimetry and KI available for emergency worker radiation exposure control.

EVALUATION

OROs demonstrate the capability to assign non-direct-reading dosimeters to emergency workers, specify the type of dosimetry (film badge, thermo-luminescent dosimeters [TLD], etc.), maintain records of the serial numbers of dosimeters, and inform workers of where and when the dosimeters should be turned in for processing.

Also, each emergency response worker has access to a functioning dosimeter charger and understands its use. OROs assign DRDs with scale ranges appropriate to measurement of any administrative dose limits established by State or local jurisdictions, and measure the dose limits established by EPA 400 or superceding documents. OROs are able to provide documentation of calibration dates and inspection for electrical leakage in accordance with manufacturers specifications.

Sufficient quantities of KI are available for emergency workers, institutionalized personnel, and the general public (if applicable). KI supplies are within the listed expiration date and plans for distribution are available.

NUREG CRITERION 2

K.3.b,4.

Emergency workers demonstrate the use of dosimetry and KI and knowledge of exposure control procedures to manage radiological exposures.

EVALUATION

OROs demonstrate that instructions are available on how to use individual and/or group dosimeters and take periodic readings. The DRDs must be zeroed and the initial readings recorded before deployment.

Emergency workers are aware of their maximum authorized exposure limit (administrative dose limit). If authorized to terminate their mission by their own decisions when a predetermined level is reached, emergency workers are aware of appropriate personnel to contact. DRDs shall be periodically read, and each **emergency** worker has an exposure record or chart. Individual exposures are recorded (in Roentgens) at the end of each mission or shift, and emergency worker exposure records and KI ingestion documentation are given to a designated person.

NUREG CRITERION 3

E.7, J.10.e,f.

Instructions on the distribution and use of KI have been prepared and are available for dissemination.

EVALUATION

The OROs have clear and definitive plans and systems in place to insure that KI is distributed and that instructions for ingestion are disseminated. OROs demonstrate the ability to implement the distribution of KI according to their plans and procedures. Instructions to emergency workers and residents on the use of KI should include the following information:

- Reasons for taking KI,
- Dosage and time within which KI should be taken,

- Information on where KI can be obtained or how it will be distributed, and
- Possible side effects.

NUREG CRITERION 4

M.1,3, J.9, 10.e. Implementation of decisions regarding controlled re-entry of emergency workers into the restricted zone are demonstrated.

EVALUATION

OROs are prepared to provide briefings to re-entering emergency workers, including information based on As Low As Reasonably Achievable (ALARA) principles.

OROs demonstrate the capability to control re-entry and exit of people and to protect them from unnecessary radiation exposure. Control procedures for exiting the restricted zone following re-entry include monitoring people, vehicles, and equipment to avoid spreading contamination outside the restricted zone.

OBJECTIVE XX: DIRECTION AND CONTROL
(Formerly Objectives 3 and 23)

Demonstrate the capability to direct and control emergency operations.

INTENT

This objective provides that OROs demonstrate the capability to control the overall response to an emergency and the capability to request assistance from Federal agencies, nuclear and other facilities, organizations, individuals, and radiological laboratories. OROs also are prepared to provide resources needed to support these assisting external organizations. (See evaluation criteria from NUREG-0654 A, C, and N).

EXTENT OF PLAY

All activities described in the demonstration criteria for this objective shall be carried out in accordance with the plan, unless deviations are provided for in the extent-of-play agreement.

DEMONSTRATION CRITERIA

NUREG CRITERION 1

A.1.d,2.a,b.

Designated personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.

EVALUATION

OROs shall demonstrate clear chains of command, their leadership and management capabilities, and their capabilities to accomplish the following:

- Delegate responsibility,
- Issue instructions to staff,
- Provide directions on use of the plan,
- Conduct staff meetings and briefings,
- Disseminate information,
- Resolve conflicts,
- Provide decision-making leadership,
- Consult with and issues instructions to staff and other organizations,
- Provide and clarify authorities needed for emergency action,
- Direct coordination with other OROs,
- Authorize implementation of PADs, and
- Provide for retention of essential information.

NUREG CRITERION 2

C.1.a.,b.,C,3.,4.

Assistance is requested for unmet needs from outside organizations (Federal, State, local, volunteer and private).

EVALUATION

OROs demonstrate the capability to recognize and identify limitations in their own resources, determine circumstances that require outside assistance, secure required resources from external organizations, and track unmet requests to fulfillment.

Assistance from outside support agencies or organizations may be in the form of personnel, knowledge and expertise, equipment, supplies, services, or funding. OROs demonstrate knowledge of the points of contact for external organizations and the use of appropriate communication systems. If assistance is requested, the requestor should document agency, official contacted, time, and assistance requested.

NUREG CRITERION 3

C.1.a.,b.,C.,3.,4.

OROs demonstrate the capability to support and facilitate the response of external organizations.

EVALUATION

OROs demonstrate the capability to provide support or resources requested by the external organizations that respond to the request for assistance. Examples of such support and resources include air fields, transportation vehicles, command posts, office space, telephone lines, radio frequencies, telecommunication centers, supplies, and equipment.

NUREG CRITERION 4

N

All activities described in the demonstration criteria are carried out in accordance with the plan, unless deviations are provided for in the extent-of-play agreement.

EVALUATION

OROs demonstrate a capability to follow policies, implement procedures, and utilize equipment and facilities contained in the plans and procedures. OROs should demonstrate that they can follow sequences outlined in the various procedures and perform specified activities, as necessary.

OBJECTIVE XXX: PUBLIC INSTRUCTIONS
(Formerly Objectives 10, 11 and parts of 16 and 27)

Demonstrate the capability to promptly alert and notify the public within the plume pathway EPZ. Coordinate the formulation and dissemination of accurate and timely emergency instructions and information to the public throughout the radiological event.

INTENT

This objective concerns both the process by which the messages containing instructions and information are coordinated among OROs and the clarity, completeness, accuracy and timeliness of the messages. Procedures need to encompass the alert and notification emergency; and issuance of instructions and information for the general public in the plume and ingestion pathway EPZs during the emergency phase and in the post-emergency relocation, re-entry and recovery phases of a radiological incident. (See evaluation criteria from NUREG-0654 Planning Standards A, E, and J).

EXTENT OF PLAY

All alert and notification activities will be conducted as they would be in an actual emergency, subject to the extent-of-play agreement.

Exception areas must be selected for demonstration and evaluation. The public address system should be demonstrated with a test message along the route or at some agreed-upon location.

A current copy of preprinted information and instructions must be ready for rapid reproduction and distribution.

DEMONSTRATION CRITERIA

NUREG CRITERION 1

E.5,6,7.

Activities associated with primary alerting and notification sequences are acted upon urgently and completed within 15 (primary) or 45 (within exception areas) minutes of decisions by authorized offsite emergency officials to activate the alert and notification system.

EVALUATION

OROs must demonstrate the capability to provide both an alert signal and an instructional message to populated areas throughout the plume pathway EPZ within 15 (primary) or 45 (within exception areas) minutes of the decision by authorized offsite officials to activate the alert and notification system. This capability must be demonstrated in conjunction with all primary notification systems for the general population, including the Emergency Alert System (EAS).

The OROs must be able to alert and notify permanent and transient populations within 10 miles of the nuclear power plant and complete the following actions within the appropriate time after each decision to alert and notify the public:

- Provide emergency alerting and notification to the public (the following table is an example of the data requested for each timed alert and notification sequence);

ACTION	SEQUENCE #1	SEQUENCE #2	SEQUENCE #3	SEQUENCE #4
(a) Time offsite official's decision was made to notify public (start clock)				
(b) Time alert system was activated				
(c) Time EAS message broadcast was initiated				
*(d) Time "Primary Route Alerting" was completed				
*(e) Time "Exception Area Alerting" was completed				
*(f) Time "Backup Alerting" was completed				
*(g) Time "Supplementary Alerting" was completed				

* If applicable<

- Select either an appropriate pre-scripted emergency instruction, modify a pre-scripted emergency instruction, or formulate an ad-hoc emergency instruction. Due to the time limitations of the EAS system, the message cannot exceed 2 minutes in length. The message must contain at a minimum, affected jurisdictions, the site status, emergency classification level, protective action decision (PAD), reference to the public information brochure and a closing statement requesting the public to stay tuned to the EAS station. Subsequent special

news broadcasts concerning descriptions of the affected geographical area in terms of familiar landmarks and boundaries, location of reception centers and other pertinent information must be provided immediately following the EAS broadcast.

- Coordinate activities with other OROs prior to release of the message, as required, for activating the alerting system and timing and choosing the contents of the notification message.
- Coordinate with the broadcast station(s) to ensure that the correct message is broadcast, and that current messages are repeated as appropriate.

- Receive verification of the ad hoc message or instructions for use of a pre-scripted message from the station.

- Activate the alert signals.

- Complete all primary route alerting and notification activities when applicable. This includes providing messages over the mobile public address system.

- Initiate dissemination of the emergency message to the public via the EAS and any other means specified as primary in the ORO plan. This includes special notification devices. Parents of school children must be notified of protective actions.

- Promptly provide copies of EAS messages to appropriate OROs (e.g., risk and support counties, State and joint information centers).

NUREG CRITERION 2

E.6.

OROs use supplementary route alerting to complement primary route alerting and/or notification methods.

EVALUATION

OROs may choose to provide supplementary route alerting and notification. Because this emergency activity is discretionary, demonstration of supplementary route alerting and notification will be negotiated in the Extent-of-Play agreement.

NUREG CRITERION 3

E.5,7.

All messages accurately reflect the protective action decisions made by responsible authorities.

EVALUATION

OROs must demonstrate the capability to ensure that emergency messages are consistent with decisions made by the appropriate offsite officials. They should be able to convey information accurately to people responsible for developing notification messages or selecting and modifying pre-scripted messages. OROs will provide emergency instructions to the broadcast station(s) for dissemination. This demonstration may include recording the message directly on a tape for use by the station, accessing the station for a live transmission, or using other means to ensure that messages are read correctly.

NUREG CRITERION 4

E.5,7.

Emergency messages contain instructions and information that are understandable and can be easily implemented by the public.

EVALUATION

OROs must demonstrate the capability to use familiar landmarks and boundaries to delineate the geographic areas covered by protective actions described in an emergency message. Descriptions may include site-specific landmarks, such as rivers, railroad tracks, buildings, and local government jurisdictions.

OROs must ensure that messages are internally consistent and that information in an early portion of the message is not contradicted by information in a later portion of the same message. The contents of the messages should be adapted to address misinformation that may have a negative impact on the public response. Emergency messages should contain information from the rumor control staff, as appropriate. The public, both in areas covered under PADs and outside those areas, must be informed to stay tuned to the broadcast station(s) for further emergency instructions and information.

The emergency messages must be accurate when compared with current accident status information provided by the licensee. Messages must contain clear language and instructions understandable to the public.

OROs must demonstrate the capability to provide instructions to the public on implementing the recommended protective actions. These instructions must indicate when and by whom these actions should be taken; must be consistent with, and refer to, previously distributed informational brochures; and must be complete enough to ensure that people without a brochure will know how and when to take appropriate actions.

Subsequent messages need to be developed that contain: instructions for transients; items to take along when evacuating; evacuation routing; locations of reception centers; instructions and information for parents of students, transportation dependent individuals, and special populations; instructions and information on protective actions for food and water, and information related to relocation, re-entry and recovery activities.

Updated instructions and information must be provided in a way that clearly distinguishes current and previous instructions. This demonstration should be supported by an accurate and current log of previous messages available at all times to message preparers.

OROs must demonstrate the capability to develop emergency messages and provide broadcasts in a non-English language when required.

NUREG CRITERION 5

A.1.b, E.5,7. OROs coordinate content of emergency messages with all appropriate staff, organizations, and jurisdictions.

EVALUATION

OROs must demonstrate the capability to coordinate with each other and with the appropriate support organizations (e.g. American Red Cross, Salvation Army) and internal staff on the content of emergency messages. This coordination may include sharing the information, joint development of message content, or providing direction on message contents to several organizations from a central coordinating organization. Emergency messages must be periodically rebroadcast even if there is no change in the emergency status.

OROs maintain copies of all instructional and informational messages that may be used by the Public Information Officials (PIO) and rumor control staff.

NUREG CRITERION 6

E.5,7, J.9,11.

When ingestion pathway measures are exercised, preprinted instructions and information are available for rapid reproduction and distribution to pre-selected individuals and businesses.

EVALUATION

OROs must demonstrate the capability to maintain copies of instructions and information for ingestion pathway actions so that they may be rapidly reproduced and distributed to predetermined individuals and businesses. A listing of organizations and businesses (including addresses, contacts,

and telephone numbers) that will receive ingestion-related materials during actual emergencies must be available.

Updated: November 24, 1997

September 12, 1997

FEMA Strategic Review Steering Committee

Concept Paper: Focus on Radiological Aspects of REP vis-a-vis All-Hazards Aspects of REP

ISSUE

Would the Radiological Emergency Preparedness (REP) Program be more effective and streamlined by focusing more on radiological activities and less on non-radiological activities?

BACKGROUND

During the course of the review of the issue of inclusion of REP in the All-Hazards (generic) approach to emergency planning, a related issue was identified by the Steering Committee concerning whether the efforts of State and local governments as well as FEMA should be focused on those activities in REP unique to radiological emergencies and less on the non-radiological aspects common to all emergencies. The issue was approached by first identifying those planning standards and evaluation criteria in NUREG-0654/FEMA-REP-1, Rev.1, and the Exercise Objectives in FEMA-REP-14 which could be considered unique to radiological emergencies and those activities common to all emergencies. Secondly, the regulatory basis for REP as presented in NRC and FEMA regulations and the NRC/FEMA Memorandum of Understanding (MOU) was examined to determine if there were any regulatory impediments to emphasizing the radiological aspects of REP while shifting the preparedness for the non-radiological aspects of REP to other all-hazards plans. Finally, the extent of changes that would be required in FEMA planning and exercise guidance documents to accommodate this change in REP program emphasis were examined. The Steering Committee was cognizant in its review and analysis that, although a shift in emphasis might occur, the bottom line remains that all EP planning standards must still be met and the resulting REP program must continue to provide reasonable assurance. However, how this would be accomplished may differ from what is currently in place.

ANALYSIS

In the analysis of the All-Hazards issue, the subject of plan format was addressed. Several States have modified their plans and "integrated" the REP-specific elements into the general body of the plan, the result being that such a format resembles the function-based, all-hazards Emergency Operations Plan (EOP) format recommended in SLG-101, *Guidance for All Hazards Emergency Planning* (September 1996). However, if the all-hazards approach is simply perceived as a re-formatting of the REP plans to fit the all-hazards EOP format, then there is little to be gained, from a strategic viewpoint, by considering REP under all hazards. Regardless of the plan's format, the emergency management personnel working with it must be knowledgeable in its contents and procedures and be able to demonstrate the plan's effectiveness in an exercise.

Review of Planning Standards and Exercise Objectives

A review of the Planning Standards indicated to the Steering Committee that it is not useful to try to ascribe Planning Standards as being radiological or non-radiological in scope. The Planning Standards usually contain aspects of both. The Steering Committee determined it would be more useful to look at the Exercise Objectives in FEMA-REP-14 and, within those Objectives, to the Demonstration Criteria.

The Committee's initial review indicated that Objectives 15, 16, 17 and 19 appear to be non-radiological functions. Objectives 1 - 4, 10 - 13, 23, 30, 32 and 33 appear to be All-Hazards, but contain radiological components. Objectives 5 - 9, 18, 20 - 22, 24 - 29 and 31 appear to have only radiological functions.

Emphasizing the radiological aspects of REP, however, does not eliminate the non-radiological aspects from concern. The non-radiological activities would still need to be verified as adequate, even if demonstrated in an all-hazard framework.

The States, including those with all-hazards plans, have been demonstrating the capability to meet the REP-14 Objectives in exercises. The question is whether it is practicable, with the maturity of the REP Program, to separate the Objectives, Demonstration Criteria and Points of Review that are considered non-radiological, and, if so, which ones? It could be problematic. For example, Objective 4, Communications, appears to be a generic preparedness and response function. However, closer inspection of some of the Demonstration Criteria reveals specific radiological functions, e.g., communications between plant operators and the Emergency Operations Center and communications from the EOC to Field Teams monitoring the environment. Another example is the NUREG-0654 element which requires continuous 24-hour emergency operation, and therefore staffing. This element is described in Objective 30, where once every six years a shift change is demonstrated with Shift 1 briefing Shift 2 on the status of the emergency and the

emergency response. A fundamental question for these Objectives, if they were under consideration for separation, would be: how important are these activities in connection with ensuring an adequate level of preparedness? Would separating these activities reduce preparedness?

There is also a much larger consideration, and that is the fundamental concept of the integrated exercise. NRC and FEMA regulations require an exercise to test the integrated capabilities of appropriate State and local government authorities and utility emergency personnel, and include testing the major observable portions of the onsite and offsite emergency plans, and mobilizations of State, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. In order to conduct a truly *integrated* exercise and test real-time capability, it is necessary to evaluate generic response functions such as Emergency Communications, Direction and Control, and Alert and Notification (EBS/EAS) along with the radiological functions. It would be difficult to have an exercise that only involves radiological activities when the "glue" for demonstrating an integrated response to a simulated emergency lies in the non-radiological functions.

Emphasizing the non-radiological aspects of REP may require some fundamental changes in the current REP Program. It may be difficult to separate some of the all-hazards/generic response functions from the radiological functions. Issues which need to be addressed include such activities as mobilization of specific response staff with capable back-up for continuous 24-hour operations; activation of an Emergency Operations Center with appropriate equipment to provide for essential emergency communications; and supporting decision-makers with sufficient information for developing and implementing protective actions for the public.

Perhaps an alternative approach in separating the radiological aspects from the non-radiological aspects would be doing the radiological response activities in discrete drills and combining these drills with "readiness appraisals," expanded exercise credit, and an expanded Annual Letter of Certification. Under this approach, Discrete Drills would entail:

- Field Monitoring Teams demonstrating their expertise in using survey meters and taking samples;

- Emergency workers demonstrating their capability and knowledge in using dosimetry, in radiological exposure control and decontamination and in KI use;

- Those with Direction and Control responsibilities showing an understanding of the technical information coming from the utility, radiological health officials, etc.

- Emergency medical staff (ambulance and hospital staff) demonstrating their

capability, and the medical protocols for treating contaminated individuals; and

- Health Physics Drills including demonstration by the staff of their capability to do dose projections and dose assessments.

In conjunction with these discrete drills, there would be "readiness appraisals," that is, walk-throughs, inspections, inventory/roster reviews, etc. Such a "readiness appraisal" could apply to an Emergency Operations Center, and may satisfy many of the non-radiological requirements in FEMA-REP-14. In some situations, exercise credit may be given to State and local organizations that respond to real emergencies or certain non-radiological response activities. And the State assessment of plans and preparedness would be reported in an expanded Annual Letter of Certification. The non-radiological objectives could be demonstrated in all-hazards exercises, with the results coordinated with the evaluations of the discrete drills involving the radiological functions.

This alternative approach may permit FEMA to make findings on the adequacy of offsite plans and preparedness. Such an approach could, perhaps, provide an opportunity for requiring less frequent integrated REP exercises.

Review of Regulatory Basis

A review was conducted of the regulatory basis for REP including the NRC and FEMA regulations and the NRC/FEMA Memorandum of Understanding (MOU) to determine if there were any regulatory impediments to focusing on those activities unique to radiological emergencies in REP and less on those aspects common to all emergencies. Emergency preparedness (EP) is covered in NRC regulations 10 CFR 50.33, 50.47, 50.54, and Appendix E to 10 CFR 50, and in FEMA regulations 44 CFR 350, 351, and 352. FEMA is responsible for assessing the adequacy of offsite EP and providing its findings and determinations to the NRC. For operating nuclear power plants, the NRC bases its findings on the overall state of emergency preparedness on a review of FEMA's findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented and on the NRC's assessment of the adequacy of the licensee's onsite emergency plans. (50.54(s)(2)(ii)) The MOU indicates that FEMA’s findings on preparedness are based on an assessment that the offsite plans are (1) adequate as measured against the planning standards and evaluation criteria of NUREG-0654 and (2) that there is reasonable assurance the plans can be implemented as demonstrated in exercises. This assumes that a periodic exercise (now biennial) will be conducted to test the plan and to verify its implementability.

Updated: November 13, 1997

September 12, 1997

REP Program Strategic Review Steering Committee

Concept paper: Partnership In The Rep Program

ISSUE

Should the role traditionally assumed by FEMA in its interaction with the States, in the REP program be modified such that a greater FEMA/State partnership is achieved?

BACKGROUND

Over the sixteen years of the REP program, FEMA's role has traditionally been that of evaluator of the State and local ability to implement emergency response plans. With the evolution of Performance Partnership Agreements and FEMA's strategic review of its REP program, a desire has arisen to reevaluate this traditional relationship and determine if a relationship defined more in terms of a State, Tribal Nations and local government partnership is appropriate.

ANALYSIS

Those advocating this approach propose that all partners have the same goal of protecting health and safety of the public. Further, the rationale continues, State, Tribal Nations and local government have the primary responsibility for protective action decisions and implementation, and, in combination with local responders, first-line response. As such, their role is integral to effective emergency preparedness and response and on this basis they should be considered partners with FEMA in accomplishing this end.

There are several concepts that can be considered related to achieving an enhanced partnership. In general, a greater partnership may be described as one that is less paternalistic, one in which each partner recognizes each other's strengths (and weaknesses), one in which FEMA exerts less oversight, one in which there is a greater emphasis on results rather than the process used to get there, and one in which open communication is practiced.

There are numerous initiatives, which might be undertaken in the name of developing a greater level of partnership in the REP program. For ease of evaluation at this point, they are grouped into primary topics.

A. Performance

A number of comments centered on giving more latitude to the States, Tribal Nations and local governments and reducing Federal oversight in the performance of REP programs. The guiding principle for the Federal government as part of the National Performance Review is to develop performance partnerships with State and local governments to promote both increased flexibility and accountability. The key feature of the partnership is the encouragement of multiple approaches to meeting jointly designed objectives.

Within the context of the REP program, certain specific performance themes related to increasing partnership are developed below.

1. Increase flexibility/latitude for partners in how to carry out REP requirements.

   The maturity of the REP program has allowed an excellent definition of the basic areas of capability (i.e. public education and information, emergency facilities and equipment, emergency classification, etc.) necessary to protect the public from a serious nuclear power plant accident. NEMA and others make the case that the States have an established record of performance in REP which verifies their capabilities to control the execution of their own programs. Increased flexibility would also allow differences to be recognized in program implementation.

   This combination of matured program definition along with increased experience levels lends itself to the next level of delegating more responsibility. For further discussion, refer to the Delegated State Program Issue Paper. Alternately, a revised REP 14/15 could recognize a greater flexibility/latitude, as could training evaluators to focus on outcomes rather than process.

2. FEMA, States, Tribal Nations and locals, in addition to utilities, would work together to determine the appropriate Goals and Objectives to support the ultimate Mission of protection of the public.

   Overarching REP Goals could be jointly established (Federal, State, Tribal

Nation, local, utility) to drive the activities at all levels. Then, objectives with specific, measurable results would be agreed to by all parties on a uniform, national basis. These objectives provide a checkpoint to assess whether the program is achieving the consensus goals and define the actual impact on the public being served, rather than measuring the level of effort expended by the particular organization.

3. Methods of accomplishing goals left to the discretion of States, Tribal Nations and local governments.

   After developing goals and objectives as discussed in item 2. above, States, Tribal Nations and local governments would then work with FEMA to develop measurable outcomes to assess achievement of these goals and objectives. These are quantitative indicators uniquely developed to each jurisdiction and many are already in place. States, Tribal Nations and local governments would be given flexibility in how they carry out guidance within the context of meeting goals and objectives.

4. Incorporate REP goals into the Performance Partnership Agreements (The PPAs are 5-year strategic plans which the States broker with FEMA. The PPAs are implemented by States and their goal is to provide greater state flexibility in achieving goals, while at the same time improving accountability. The focus is on results rather than the process.)

   The use of the PPA process allows States to be treated as emergency management partners. Inclusion of REP goals and performance measures in the PPA will encourage the integration of REP into the overall State emergency preparedness mission. Since most States are required by their own legislatures to have a strategic plan, this will permit the States to present all aspects of their emergency management mission in one strategic document, irrespective of funding source. Note though that actual use of a PPA document would be optional because if what is outlined in items 2. and 3. above has been accomplished, the underlying basis of a PPA has been done also.

Advantages to this type of performance approach include increased flexibility in carrying out REP programs, including the ability to ensure that plans and exercises apply to real events rather than simply to achieve a goal of passing an exercise. A potential disadvantage of this approach is that the development of REP goals and performance measures (and their assessment per performance indicators) are time consuming.

B. Evaluation

Note: This section, which was previously included in the July 3, 1997 version of the Partnership Concept Paper, has been consolidated in the Exercise Streamlining Concept Paper.

C. Policy

Partnership in the policy area effectively means greater stakeholder involvement in its development. This policy involvement thus can be divided into two distinct areas: the strategic review process itself and guidance and policy developed as part of the ongoing program. The former will be considered in detail as part of the evolving strategic review process. The latter will be the focus of the discussion here.

A greater partnership in the policy area could be accomplished through a variety of means including discussion of policy issues during workshops, conferences, or specially gathered meetings. The success of the Standardized Exercise Report format development could serve as a model for future endeavors (a first draft was provided for comment with the resulting second draft discussed at a meeting of State, utility, FEMA and NRC regional representatives). Whatever stakeholder involvement is put in place for the Strategic Review process would provide valuable lessons learned for what might be viable on a more permanent basis. Naturally, consideration of FACA would continue. In any case, for partnership to evolve in the policy area, the concept must be given more than "lip service"; stakeholders must be made to feel that their views are given full consideration. At the same time, FEMA must remain objective concerning the goals of the program and ensure that stakeholder self-interest does not become the driving force in future policy development.

The pros of continuing stakeholder involvement in the REP program policy area include: (1) greater ownership of policy changes and thus improved acceptance of such changes, (2) improved expediency of FEMA becoming aware of implementation issues and proposed alternatives, (3) a resulting greater consistency among FEMA regions of the developed policy, and (4) increased FEMA access to a broader base of technical expertise and experience. In contrast, cons include the need for greater in depth analysis of stakeholder positions (perhaps using individuals with the appropriate technical expertise) to ensure appropriate policy is accepted.

D. Technical Assistance

Numerous comments were received about FEMA increasing the technical assistance it provides to shifting its emphasis from prescriptive evaluation to technical

assistance to States, Tribal Nations and local governments. For the purposes of this discussion, "technical assistance" herein refers to both planning and programmatic assistance and specific assistance on radiological issues.

The benefits of increasing such technical assistance include furthering the partnership relationship because the assistance would be offered in a non-evaluative forum. FEMA's role would move away from being primarily an evaluator toward being a greater facilitator and educator. FEMA would in an expanded way assist and support the States, Tribal Nations and local governments. The idea of increased technical assistance is closely tied to the idea of improved customer service.

From a resource standpoint, FEMA may have to shift resources from other areas (evaluation perhaps) in order to provide a greater level of technical assistance.

Means of increasing FEMA's technical assistance could include:

1. FEMA could sponsor technical assistance conferences throughout the year. Such a conference could allow FEMA the opportunity to share its observations gathered from years of REP exercises. This type of conference with a national reach could be supplemented by regional or local seminars.

2. FEMA could prepare an internet web site for technical assistance.

3. More emphasis could be placed on the process used in correcting issues raised during drills and exercises and less on simply grading. Redemonstration during drills would provide a better learning environment and present an increased collaborative relationship between FEMA and the State, Tribal Nation and local organizations.

4. FEMA's courtesy evaluations during rehearsals could be continued or perhaps expanded. They are especially helpful in training and preparedness because they allow evaluators to share their extensive experience. At the same time, the courtesy evaluations are not threatening absent the evaluation and are thus conducive to learning and exchanging information.

5. FEMA could encourage more conference calls as a means to address issues rather than relying on written communications. This more open form of communication will increase partnership and the efficiency of the REP program through more expedient resolution of issues and answers to questions.

6. FEMA could take a more active role in implementation of the Emergency

Alert System (EAS).

7. FEMA could assist in obtaining data on special needs populations (privacy issue).

8. FEMA could provide a greater level of assistance to States, Tribal Nations and local governments in improving their emergency preparedness plans.

9. FEMA liaisons could spend more time in the field to become more familiar with particular sites and in the process achieve better relationships with various levels of government. Such increased number of site visits would serve to provide ongoing technical assistance. Funding would be a consideration.

10. FEMA could provide greater evaluation and insights into how the continuing fast pace of technological changes impacts the REP program.

11. FEMA could participate in State, Tribal Nation and local training programs.

12. FEMA could provide technical assistance to States, Tribal Nations and local governments in implementing corrective actions resulting from exercises.

13. FEMA could work with other Federal agencies to identify key radiological monitoring and assessment capabilities, determine where additional effort is needed, and work to accomplish those activities, needs and then satisfy those needs.

It is interesting to note that the types of technical assistance suggested are largely in the programmatic or planning areas. Assistance of a clear technical nature is absent. In fact, comments received suggested either that FEMA refrain from providing technical radiological information or expand its own expertise in health physics and radiation sciences. FEMA can improve its technical guidance by (a) ensuring that cognizant RAC members are utilized for this purpose, (b) issuing guidance as joint FEMA/NRC/EPA guidance, and (c) including stakeholders in its development. Should FEMA radiological expertise be cultivated, FEMA could provide names of contacts that could be called with questions on guidance. Even if FEMA obtains in-house technical expertise, serious consideration should be given to the appropriateness of FEMA developing technical standards in areas, which impinge on other agencies' statutory responsibilities. FRPCC-developed materials may be incorrectly interpreted to be solely FEMA documents because FEMA prints and distributes them so there may be merit in obtaining FRPCC letterhead and issuing documents under the auspices of the FRPCC, when appropriate.

The major pros of increased technical assistance would be providing States, Tribal Nations and local governments more of the type of assistance they need from FEMA in order to improve their radiological emergency preparedness programs. The primary con of this shift in emphasis is the FEMA resource issue. It becomes less onerous if resource savings can be found in the evaluation area or elsewhere. The other resource component of course is the level of radiological expertise residing at FEMA.

E. Federal Exercise Participation

Increased Federal participation in REP exercises would give partners the needed experience of operating with the various Federal agencies and knowing what resources are available in radiological emergencies. Criticism includes that the Federal government has a significant role in response but does not subject itself to the same expectations which it places on States, Tribal Nations and local governments. By participating in REP exercises (specifically greater participation in ingestion and relocation, reentry, and recovery exercises), the Federal agencies allow themselves to be critiqued (refer to Section (B), item 1.) and learn from the process as do the States, Tribal Nations and local governments. Partnership would be furthered by such increased Federal involvement. Lack of participation in exercises past the plume phase leaves players wondering whether the Federal agencies are indeed prepared to deliver assistance and whether plans to accomplish and coordinate assistance are in place. The benefit to the Federal government of fuller participation is to uncover those shortcomings in our own preparedness schemes (in particular with our interrelationships with each other) which could prove disastrous and/or embarrassing in a real event. Federal participation would also allow testing of the FRERP organization and the exercising of interagency cooperation.

A further benefit of Federal participation is the increased realism in the scenario. Negative training is a likely result when appropriate Federal participation is lacking and thus one could argue that there is little value to post-plume phase exercises which lack appropriate Federal participation. FEMA could take a lead role in assisting the States, Tribal Nations and local governments to use FRMAC most effectively.

Naturally, the biggest drawback to increased Federal participation is resources. The appropriate management level of each affected agency (FEMA, DOE, NRC, EPA, USDA, HHS) would have to agree to make this a priority by providing the required staff. In addition, any internal agency procedures not developed would require resources to complete. Resources would also be required for interagency

coordination to achieve exercise participation and for addressing outstanding issues associated with exercising the Federal role.

The above elements do not represent an all-or-nothing proposition. All or some of the conceptual items can be implemented depending on how partnership is to be defined in REP and the degree of partnership desired.

Areas of Overlap with other concepts being explored

1. The Performance element of this paper is closely related to the PPA concept and the results vs. outcome paper.>/li>

2. The Policy element is tied to the stakeholder involvement in the SRSC process itself and indeed that is one component of the Policy element. What is determined applicable for this process can certainly serve as a pilot program of sorts for future involvement of stakeholders in policy development endeavors.

3. The Technical Assistance element is tied to the resource question, and specifically the radiological assistance component relates to the use of contractors and whether FEMA should obtain in-house health physics and radiological expertise.

4. The Federal Exercise Participation element is related to questions concerning Federal coordination both in obtaining agreement to increase Federal participation and in actually implementing this policy in exercises. Federal resource constraints will presumably be a major factor.

5. In addition, partnership type elements may be used as incentives for participation in a Delegated State program. For example, Delegated States may be given a priority for technical assistance and/or participation in policy development.

RECOMMENDATIONS

To be determined.

Updated: November 13, 1997

September 12, 1997

REP Program Strategic Review Steering Committee
Concept paper: Delegated State

ISSUE

Can a structured program within which States are delegated exercise evaluation responsibilities traditionally performed by FEMA be developed such that reasonable assurance can continue to be assured and efficiencies through streamlining achieved?

In any restructured REP program, FEMA must continue to provide the NRC with its determinations on reasonable assurance unless there is a change in NRC regulations (10 CFR 50.47). This regulation, however, does not specifically state how FEMA will make reasonable assurance determinations. The operative question is the method of gathering information which FEMA uses to make these site-specific reasonable assurance findings. The current method is outlined in 44 CFR 350 and the FEMA-NRC Memorandum of Understanding.

Reasonable assurance findings are comprised of two components:

(1) FEMA must determine that plans and preparedness are adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency.

(2) FEMA must determine that plans and preparedness are capable of being implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment adequacy.)

BACKGROUND

In an effort to restructure the FEMA REP program to make it more efficient and effective, during the initial SRSC meeting, a working group was tasked to explore the feasibility of FEMA modeling the REP program on aspects of the NRC agreement State program.

Members of the SRSC pointed out that several other Federal agencies/departments have programs which are implemented by the States with oversight provided by the Federal government. In addition to the NRC Agreement State program, examples are: the EPA permitting programs for the Clean Air and Clean Water Acts; the OSHA safety and health program; the USDA meat and poultry inspection program; and the FDA mammography program.

ANALYSIS/DISCUSSION

Basic Program Outline

(1) Under a Delegated State Program, FEMA would continue to make site-specific reasonable assurance determinations and provide those findings to the NRC.

(2) States would apply to become Delegated States on a voluntary basis and FEMA would review and approve (or deny) such requests.

(3) A Delegated State would assume responsibility for exercise evaluation and provide a detailed Annual Letter of Certification (ALC) each year.

(4) FEMA would provide a limited oversight role to the State's activities which would include supplemental verifications and review of the ALC.

A discussion of Impact is included in Appendix 1, and a summarization of the NRC Agreement State Program is included in Appendix 2.

Recommended Application Process

The Delegated State Program would be a voluntary program, but 44 CFR 350 approval would be required of States that apply. By definition, this approval means that reasonable assurance exists regarding a State's capabilities. Requiring 350 plan approval for each entrant to the Delegated State program provides a common foundation for all applicants. Such a requirement further lends a tangible benefit to obtaining a 350 plan approval. FEMA should work with States that are interested in obtaining 44 CFR 350 approval for the purpose of gaining Delegated State status.

NUREG-0654/FEMA-REP-1 would continue to be the basic guidance document for the REP program, for both Delegated States and other REP States. Thus, a State's adherence to NUREG-0654/FEMA-REP-1 and having plans consistent with it would remain unchanged.

To initiate the process, the Governor, or designee, would request approval to be a Delegated State from FEMA. The State would have to meet certain criteria outlined by FEMA for participation. The original application could include:

(1) a commitment to use REP 14/15 (or the applicable variant endorsed by FEMA),
(2) an exercise/drill schedule in conformance with NUREG-0654/FEMA-REP-1, Planning Standard N,
(3) a commitment to use a standard exercise report format,
(4) a commitment to hold a public meeting in the vicinity of the plant to discuss exercise results following a full-scale exercise,

(5) a discussion of the corrective action program to resolve drill and exercise deficiencies (i.e., inadequacies which directly affect the health and safety of the public) within 120 days (Note: It may be useful for FEMA to compile multiple examples of deficiencies and areas requiring corrective action (ARCA) for use by Delegated States in an attempt to achieve consistency among them),
(6) a commitment to maintain plans and procedures in conformance with NUREG-0654/FEMA-REP-1, Planning Standard P,
(7) a commitment to use a standard format for the Annual Letter of Certification,
(8) information regarding the appropriate level of staffing and training for evaluation of exercises,
(9) a statement that in-state coordination has occurred among stated departments, including emergency management, radiological health (responsible for dose assessment/projection), and other jurisdictions within the 10 mile EPZ, and
(10) a commitment to apply exercise credit consistent with FEMA's policy (see discussion later in paper).

Past performance could also be considered in granting Delegated State status. For example, there should be no outstanding exercise deficiencies at the time of the application to the program and an acceptable Annual Letter of Certification should have been submitted for the previous year.

Based upon FEMA's approval of the State's proposal, a State would be designated a Delegated State. If there is a shortfall in the application package, FEMA would identify it to the State and provide assistance in improving the shortfalls.

Program Implementation

Once the State receives approval, it would begin its own planning for conducting and evaluating its own exercises. No extent-of-play agreements would need to be negotiated with FEMA. Each year, the State would be required to provide an ALC with details on completion of periodic requirements and changes to the program. The ALC would also contain the exercise report with issues explained and discussion of corrective actions taken. A standard ALC format would be required for all Delegated States, perhaps requiring an update to Guidance Memorandum PR-1.

The ALC with cover letter from the appropriate State official would become the non-exercise vehicle for documenting compliance with periodic requirements and continued reasonable assurance. The appropriate State official would certify in each ALC cover letter that (1) reasonable assurance continues to exist, (2) there has been no loss of the ability to meet planning standards, and (3) the program does not contradict any regulatory requirements. These assertions would be based on compliance with periodic requirements, correction of exercise issues, and/or no programmatic changes that affected reasonable assurance, and this basis would be provided in the ALC.

In examining the ALC, FEMA could rate each function as outlined in the ALC (defined in Section C, page 8, of Guidance Memorandum PR-1, "Policy on NUREG-0654/FEMA-REP-1/FEMA-REP-1 and 44 CFR 350 Periodic Requirements," or its revision). Suggested ratings could be acceptable, acceptable with recommendations for improvement, or unacceptable. Once each function is rated, there would be an overall finding provided on reasonable assurance.

The reasonable assurance finding could be described in one of three ways: (1) reasonable assurance exists (consider decreasing verification frequency; State continues to evaluate its own exercises), (2) reasonable assurance exists but program needs improvement (State continues to evaluate its own exercises), or (3) reasonable assurance does not exist. FEMA's review of the ALC would determine whether followup discussions are required with the State as REP partners. In the latter instance, the State would develop improvement strategy/tactics in cooperation with FEMA, NRC, and other cognizant RAC agencies to upgrade its program with timing consistent with 44 CFR 350 to reestablish reasonable assurance. FEMA could perform an oversight role by assisting in evaluation at the next exercise to ensure program adequacy. If the deficiencies are severe enough or not appropriately corrected, FEMA could take other action up to and including removing delegated State status.

These findings could be made using in-house staff with assistance from appropriate FRPCC agencies and with minimal contractor support for technical areas. FEMA would need to ensure consistency in REP regional staff review.

The ALC would also contain the changes to the State's and locals' plans. (These changes are required to be submitted by 44 CFR 350, Section 350.14(c) and (d).) In this way, FEMA would remain aware of how plans are evolving and allow FEMA to provide any needed overview in this regard.

Delegating the Evaluation Function

The primary function that would be delegated and which is central to the Delegated State program is the evaluation function. The basic premise would be that States would evaluate their own exercises utilizing the current FEMA-endorsed methodology (e.g., a revised REP 14/15 or applicable variant endorsed by FEMA). In doing their own evaluations, States could utilize other State and local personnel as their evaluators as long as these persons meet the evaluator criteria defined for the program. States may also request supplemental assistance by FEMA if they desire; FEMA participation would be based on its interest and availability. The program may also contain provisions that FEMA provide a small cadre of evaluators to observe an exercise or assist in evaluation based on lack of reasonable assurance arising from earlier exercise findings.

Any evaluation methodology utilized by a State would require trained evaluators and an exercise report (e.g., the SERF as potentially modified for Delegated States) that describes issues identified and proposed corrective actions.

Evaluated aspects of the REP program would be included in delegated responsibilities even if done out of sequence from a regularly scheduled exercise (e.g., medical drills or alert and notification tests).

Delegated State Program and Credit Policy

A recommendation resulting from the Strategic Review may be that FEMA implement a standard national policy outlining under what circumstances responses to actual events can be granted credit for REP-required activities. Delegated States following this to-be-developed national credit policy would be permitted to apply it to their exercises. States would document an after-the-fact discussion of how they applied the credit policy as part of their ALC submittal. (The original application package would also include a commitment to adhere to the national FEMA credit policy.) FEMA, in its review of the ALC, would have an opportunity to review the use of the credit policy. Any questions could be addressed to the State. If FEMA identifies inadequacies in the application of the credit policy, FEMA could opt to require some remedial action.

Supplemental Verifications by FEMA of Aspects of Delegated State Programs

FEMA may opt on a two- to three-year basis to verify limited portions of a Delegated State's program. Potential areas for verification include:

(1) the training plan for responders to ensure conformance with NUREG-0654/FEMA-REP-1, Planning Standard O,
(2) the drill/exercise evaluation plan (e.g., evaluator locations, source of evaluators) and methodology which utilizes REP 14/15 (or its revision),
(3) the plan and procedure maintenance program in conformance with NUREG-0654/FEMA-REP-1, Planning Standard P,
(4) the roster of key staff for each responding offsite response organization, and
(5) periodic visits to assess facilities, equipment, and training.

This aspect of the program could be tailored such that States with positive performance history could have verifications performed less frequently than other States and conversely those not performing as well as could have verifications performed more frequently.

Financial Issues

REP program funding is provided by utilities in the form of user fees to FEMA. In the Delegated State program, funding could be modified such that (1) FEMA passes through some of this money which could be earmarked for the REP program in Delegated States to the Delegated States or (2) the utilities provide money directly to the States which could have been provided to FEMA otherwise. Option (1) may not be a viable option because if the amount of money provided to FEMA by utilities is based on the amount of REP hours spent on a particular facility, the number of FEMA REP hours could decrease in a Delegated State. Therefore, FEMA would not have the REP money to pass through to the State.

REP and the Performance Partnership Agreement (PPA)

Inclusion of the REP program in a State's PPA for a Delegated State could remain optional analogous to the current option of States to either include or not include their REP program into the PPA. Therefore, the Delegated State choice would not affect the State's choice regarding including REP in its PPA.

Non-Delegated States

States other than Delegated States would continue to be evaluated by FEMA in a revised REP program. FEMA would continue to evaluate the State offsite exercises and produce the exercise report with recommendations to correct identified weaknesses. Non-delegated states would require a similar level of effort as currently expended by FEMA to assess reasonable assurance. If a non-delegated State did not submit an ALC, FEMA would have to collect data which would normally be included in an ALC (now typically done when State performance is an issue).

Advantages of the Delegated State Program

Assuming the proper controls are in place, what could be advantages to the States for FEMA to offer a Delegated State Program?

(1) States would have much greater flexibility in conducting their radiological emergency preparedness program. Once the State meets specific criteria and is designated a Delegated State, it would still be responsible for offsite preparedness. However, their methods and procedures would not be prescribed by FEMA (beyond basic program requirements). Therefore, Delegated States would have greater control over how they implement the REP Program. Delegated States could focus more on results. The Delegated State Program provides the possibility for flexibility in exercise evaluation (no Federally-negotiated extent of play agreements) and correction of exercise issues (not responding to FEMA recommendations). Delegated States would have more ownership of the program.

(2) One of the conditions for Delegated State approval could be that the site must have been granted 44 CFR 350 approval. This could be a minimum threshold indicative of FEMA having completed and accepted a review of their plans. Therefore, the 44 CFR 350 approval process could take on greater importance and more States may be interested in seeking this approval.

(3) The Annual Letter of Certification would take on increased importance as the primary document FEMA would review to assess reasonable assurance. The Delegated State would be required to submit the ALC documenting exercise evaluation and other aspects of their program.

(4) The Delegated State program could reduce FEMA resources needed for the REP program because those Delegated States would be doing their own exercise evaluations. This could be a significant streamlining of the REP program and associated resources while allowing a greater level of REP staff assistance and REP policy work.

(5) In a Delegated State program, the individuals most knowledgeable about a program would be evaluating it. This could be a significant advantage in terms of program efficiency and identification of meaningful findings (as well as ownership of those findings).

Potential Disadvantages of a Delegated State Program

(1) States would be evaluating their own programs and thus evaluating themselves. If not properly implemented, this could be detrimental to the REP program.

(2) States would not have ready access to FEMA experience and knowledge. (Although an increase in staff assistance may alleviate this disadvantage.)

(3) Without additional funding, State resources may not be sufficient to implement a Delegated State program.

(4) FEMA could be administering a "dual system" including delegated and non-delegated states.

Pilot Program

Because of the significant change envisioned by the Delegated State concept, a pilot program would be implemented. Lessons learned from the pilot program would determine if and how the Delegated State program would be fully implemented.

Appendix 1

Impact

If the model of the NRC Agreement State program (or other similar Federal agency program) is adopted ***in whole or in part***, FEMA's oversight role in the REP program could change significantly. Roles of the FEMA headquarters and regional REP staff, and States would be redefined. Additional training would probably be required at all levels.

Should the Agreement State model be adopted, ***in whole or in part***, it is likely that numerous guidance documents would need revision as well as 44 CFR 350 and the NRC-FEMA MOU.

As with the NRC Agreement State program and other similar Federal programs, there is potential that some States, by not having 350 approval for all or some plans (i.e., those with interim findings), would not become REP "Agreement States," thus there would need to be a parallel REP program administered by FEMA for those States (or sites because 350 approval is site specific).

Appendix 2
Summary of NRC Agreement State Program

Authority

The NRC Agreement State program is legislatively authorized by the Atomic Energy Act, as amended. The OSHA, EPA, and USDA programs are also legislatively authorized.

NRC Agreement State Program

The NRC program is designed to relieve the NRC of regulating certain classes of radioactive materials licenses among Agreement States. States voluntarily submit their programs for Agreement State status (voluntary submission is also found in the OSHA and Clean Water Act programs). In Agreement States, the States issue licenses, assess fees to licensees, and inspect licensees. Regulation of nuclear power plants is not included in the Agreement State program. In those States which are not Agreement States, the NRC regional office regulates the licensees. The NRC does not provide funding to Agreement States and in some cases will charge an Agreement State for technical assistance. The NRC Agreement State program is not a delegated program, that is, the NRC "cedes" its regulatory authority. Funding is not provided the Agreement States, training is not funded and is only provided on a space available basis in NRC courses. OSHA and EPA differ in that they do provide some funding, specific direction to their programs, and training.

Program Characteristics

How does a State become an Agreement State? This is a voluntary program. States must have a "compatible" (with NRC standards) and "adequate" (to protect public health and safety) radiation control program. This includes State statutes, regulations, and trained staff. The NRC reviews the State program and, if approved, there is a signing ceremony and phased-in State regulation.

Number of NRC Agreement States: There are currently 29 NRC Agreement States. This represents approximately 15,000 radioactive materials licenses, which is about 70 percent of all the radioactive materials licenses issued in the United States.

Advantages of Agreement State status:

1) fulfills intent of Atomic Energy Act, as amended
2) State radiation control agencies have the option to regulate almost all radiation sources normally regulated by the NRC (except nuclear power plants)
3) Regulatory agency is closer to licensees and can generally be more responsive to licensees

4) enhances core of knowledgeable persons at State level
5) single regulatory agency for most users
6) in general, fees charged to licensees are lower
7) decreased requirements placed on NRC

Disadvantages of Agreement State status:

1) States must fund program administration
2) some licensees may still be subject to more than one regulatory agency
3) requires coordination between NRC and States
4) requires parallel program administered by NRC in non-agreement States

Methods of NRC Oversight

The NRC maintains oversight using the following methods:

1) NRC approves new Agreement States

2) Assesses compatibility and adequacy of Agreement States periodically, using the Integrated Material Performance Evaluation Program (IMPEP). This is a team (a national cadre which includes both Federal and State staff) which performs evaluations of the program periodically (anywhere from 2-4 years - based on past performance record of the state). NRC has developed measurable performance indicators related to 5 areas: status of materials inspection program, technical staffing and training, technical quality of licensing actions, technical quality of inspections, and response to incidents and allegations.

3) Exchanges regulatory and safety information with Agreement States, e.g., telephone, conferences, correspondence, workshops)

4) provides technical assistance, as deemed appropriate (there are some cases where the NRC will charge the Agreement State for this service)

5) trains State personnel on a space available basis

Other Federal programs similar to the NRC Agreement State program use similar means to provide oversight (e.g., review/approve plans, on-site visits, review various state reports).

Possible Application of Agreement State Concept to FEMA REP Program

Most states have voluntarily submitted their plans for 350 approval. Such approval would be a prerequisite for entry to the "Agreement State" program. Of the 69 sites, there are currently only 12 sites for which a State does not have 350 approval. Those sites are:

Vermont Yankee	Limerick
Seabrook (MA.)	Three Mile Island
Pilgrim	Susquehanna
Artificial Island (NJ)	Diablo Canyon
Beaver Valley (PA)	San Onofre
Peach Bottom	WNP-2

These sites without 350 approval (interim findings) would be evaluated by FEMA in a parallel program. FEMA would evaluate all exercises and produce the report with recommendations to correct identified weaknesses. FEMA would increase its role in monitoring State programs which do not have 350 approval (i.e., actually document first-hand State compliance with periodic requirements).

There are certain aspects of the current FEMA REP program which could possibly be used to restructure the REP program along the lines of the NRC Agreement State program and other similar Federal programs. However, there is a significant difference between the REP Program and the other agency programs. The other agency programs involve State oversight of third parties, like hospitals, private industries, etc., not the States themselves. If FEMA were to relinquish some of its REP authority to the states, the States would essentially be monitoring themselves. This distinction needs to be kept in mind when examining parts of the REP program that could be devolved to the states.

September 12, 1997

REP Program Strategic Review Steering Committee
Concept Paper: Exercise Streamlining

ISSUE

In July 1996, a Federal Register notice announced the strategic review of FEMA's Radiological Emergency Preparedness (REP) program and requested comments. A majority of the comments received indicated that the stakeholders and customers in the REP program are not satisfied with FEMA-REP 14 (REP Exercise Manual) and REP-15 (REP Exercise Methodology). Furthermore, the respondents indicated that the application of current documents is not uniform and consistent during REP exercise evaluations and that the current sets of EEMs and FEMA-REP-14 should be revised.

BACKGROUND

The foundation for REP exercises can be located in 10 CFR 50 and 44 CFR 350, 351, and 352, and the NRC and FEMA Memorandum of Understanding (MOU) dated June 17, 1993, which is in 44 CFR 353.7, Appendix A. According to 10 CFR 50, Appendix E, a "Full Participation" exercise is defined as the testing of the major observable portions of the onsite and offsite emergency plans and the mobilization of State, tribal, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. 44 CFR 350, section 350.9, subparagraph (a) indicates that a joint exercise (onsite and offsite) with full participation of appropriate State and local government authorities and the licensee would be conducted. The 1993 MOU, Section II, 2. (2) states that the purpose for an exercise is to provide reasonable assurance that the plans can be implemented. Section III, paragraph C of the MOU discusses the preparation for and evaluation of joint exercises, but does not elaborate on methodology. The only mention of FEMA-REP-14 is to indicate the schedule for issuance of exercise reports. 44 CFR 350, section 350.13, (a) (2) states that the basis used for reviewing both plans and exercises is NUREG 0654/FEMA/REP-1, Rev.1. It is noted that the sixteen (16) planning standards of NUREG-0654 are contained in both 44 CFR 350 and 10 CFR 50.

To clarify what constituted an exercise, and to develop a standardized evaluation methodology, FEMA issued Guidance Memorandum EX-3 in February 1988. This document provided guidance on the REP exercise process and introduced a set of 36 standard exercise objectives. The 36 exercise objectives were based on the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Revision 1 and Supplement 1.

Based on these exercise objectives, the original Exercise Evaluation Methodology (EEM) was issued in May 1988 as an interim-use document. The 1988 edition of EEMs was

developed as an objective-driven exercise evaluation instrument to replace the modular format issued in August 1983.

Comments were requested from FEMA Regions, states, local governments, NRC licensees, and other Federal agencies for the refinement of the EEMs. Based on the comments received, FEMA revised and issued FEMA-REP 14 and REP-15 in September 1991. This refinement included a reduction to 33 exercise objectives. These 33 objectives were meant to represent a functional translation of the planning standards and evaluation criteria of NUREG-0654 that could both be demonstrated and observed during REP exercises. In addition, many elements of various GMs that had been issued by FEMA were incorporated into both REP-14 and REP-15.

ANALYSIS

The following discussion is based on the current REP guidance for exercise evaluation. It also identifies several new methods to confirm the existence of reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of a nuclear power plant in the event of a radiological incident. The purpose is to identify an acceptable approach to streamlining the exercise evaluation process and supporting guidance. The concept paper also identifies additional methods, that if used in conjunction with exercise evaluation, could also be used to establish and/or confirm that reasonable assurance is being maintained. Some of the approaches that may be considered are: concentration on a "results oriented" evaluation process, concentration on objectives that are radiological in nature, expanded use of the Annual Letter of Certification (ALC), verification of ALCs through the use of random inspections, development of a more flexible credit policy for participation in other natural hazard exercises and for response to real incidents, etc. These and other approaches are addressed in more detail in the Discussion section of this concept paper. The SRSC did not want to give the impression that, at this point, the resulting exercise guidance and evaluation methodology would be interpreted as a revision to REP-14/15, since it might take an entirely different form. Thus the paper is titled Exercise Streamlining.

DISCUSSION

1. FEMA-REP-14 and 15 should be revised to support a "results oriented" exercise evaluation process.

At the present time, exercises are evaluated in an "objective based" format with a methodology that includes a sizeable number of Points of Review that must be satisfactorily demonstrated to successfully meet the requirements of the objective. This system is very structured and leaves little latitude for satisfying the objective by alternate means. "Results oriented" exercises allow the players to complete an activity without following a specific checklist. This approach will provide the exercise players much more latitude to reach the desired results. It will also allow state and local government

the flexibility to concentrate training activities in the areas where responders feel additional reinforcement is needed.

Evaluators will then concentrate on the results of exercise participation, not the means to reach a result. If a player uses an alternate means to complete a task and there is no negative effect because of this, there should not be an exercise issue.

2. Concentrate more on radiological aspects of REP and less on "All-Hazards" response aspects. Therefore, unnecessary objectives and Points of Review could be eliminated.

Recommendations have been made to streamline the REP Exercise Program to concentrate more on specific radiological aspects of REP and less on the "All-Hazards" aspects. Currently, REP-14 and REP-15 contain several objectives and Points of Review, which are designed to evaluate portions of an offsite response organization's overall preparedness and response capability. Some of these objectives and points of review focus on response procedures and capabilities which are applicable to any type of emergency such as fires, chemical spills, flooding, tornadoes, and other natural or technological hazards. Yet, it is conceded that jurisdictions with REP programs are better prepared than most to meet the demands of other disaster events.

Some specific areas of REP-14 and REP-15 that focus on "All-Hazards" response procedures and capabilities are: Objective 1, Mobilization; Objective 2, Facilities and Equipment; Objective 3, Direction and Control; Objective 4, Communications; Objective 17, Traffic and Access Control; Objective 19, Congregate Care; Objective 30, 24-Hour Staffing; Objective 32, Unannounced Exercise; and Objective 33, Off-Hours Exercise. Many of the Points of Review (PORs) evaluated within these objectives involve activities that are routinely conducted by emergency responders during various non-REP disaster responses or exercises. Therefore, some of these PORs, and in some cases objectives, which are not REP-specific could be eliminated from the REP exercise evaluation process. However, the objectives would still need to be evaluated by some other means.

3. Several objectives and Points of Review (PORs) are closely related; REP-14 and REP-15 could be streamlined by combining similar objectives and PORs.

Comments from numerous state and local, utility, and federal organizations have indicated a desire to streamline REP-14 and REP-15 objectives. Obvious similarities between objectives and repeated experience in exercise evaluations provide strong evidence that several objectives can easily be combined without harming the evaluation process. By combining objectives, duplicate points of review, and in some cases, entire objectives may be eliminated. The evaluation document will become less prescriptive and more supportive of the outcome based approach (see 1. Above).

Some examples of objectives which should be combined are: Objectives 1 (Mobilization) and 30 (24-Hour Staffing); Objectives 2 (Facilities), 3 (Direction and Control), and 4 (Communications); Objectives 5 (Exposure Control) and 14 (KI); Objectives 6 (Ambient

Monitoring) and 8 (Airborne Radioiodine Monitoring); Objectives 11 (Public Instructions), 12 (Media Information) and 13 (Rumor Control); Objectives 15 (Special Populations) and 16 (Schools); and Objectives 18 (Reception Center) and 22 (Emergency Workers).

4. FEMA-REP-14 and REP-15 must be updated to include/reflect numerous changes in Federal guidance which have occurred since publication of the documents and to resolve inconsistencies with other guidance.

Subsequent to the publication of FEMA-REP-14 and 15 in September 1991, several major changes in Federal guidance have occurred which significantly impact the REP program. FEMA-REP-14 and 15 must be updated to ensure that they are current and consistent with other Federal regulations and guidance.

Some examples of changes which are required for REP-14 and 15 include: update to reflect the Emergency Alert System (EAS) and the use of "Special News Broadcasts"; update to ensure consistency with the current EPA 400 Manual of Protective Action Guides; and to reflect the current philosophy of using "Total Effective Dose Equivalent (TEDE)" to determine radiation exposure.

5. The required demonstration frequency of objectives should be reevaluated. Some objectives should be demonstrated more frequently and others less frequently.

a. Several comments regarding the Strategic Review have indicated a desire for more frequent demonstration of Relocation, Re-entry, and Return and Ingestion Pathway objectives (Objective numbers: 23, 24, 25, 26, 27, 28, and 29). As these objectives represent a significant portion of the response process, increasing the demonstration requirements to something more frequent than every six years is advisable. This may be a misunderstanding of the intent of the guidance. Currently the requirement calls for the demonstration of ingestion and recovery functions at a minimum, every six years. The state and local government officials may choose to demonstrate these functions more often if they choose.

   One concept presented is to have an option to start the exercise at the post emergency phase (Recovery and Ingestion) thus eliminating the emergency phase. This would allow full concentration by the players on the Relocation and Ingestion objectives. This option could be supported if there has been a series of successful Emergency Phase exercises.

   There are several objectives that could be demonstrated less frequently than the current guidance requires. One example is to require the evaluation of Medical Drills every two years instead of annually.

6. FEMA-REP-14 should contain additional guidance concerning out-of-sequence evaluations.

a. It is possible to perform numerous exercise demonstrations out-of-sequence from the biennial exercises. Out-of-sequence demonstrations may be scheduled during the non-exercise year, other times during the exercise year, and/or another day during the exercise week.

Examples of some facilities or functions that may be conducted out-of-sequence include:

1. School drills should be conducted during the school year. Exercises are conducted many times when schools are out of session. This drill could be evaluated out of sequence to the full-scale exercise, during the school year.

2. Medical Services drills are currently conducted out of sequence most of the time. The current requirement to demonstrate once every year may be relaxed. (See MS-1 paper).

3. Reception/Mass Care demonstrations may be more beneficial to the players and the schools if these evaluations were conducted outside of the exercise. The FEMA evaluator and jurisdiction staff could visit all school facilities to be used as mass care centers. The county officials/players can provide a schematic of the monitoring/decontamination area of the school. The FEMA staff person may be able to offer constructive ideas to improve the layout. Once a reception/mass care center has been visited and evaluated, there should not be a need to revisit the same center until centers are changed (or if there have been physical changes to the facility). The abilities of the monitoring and decontamination teams staffing the reception/mass care centers during an incident would need periodic evaluation, either during the scheduled exercise or out-of-sequence, at the county or at places of employment. There is no need to evaluate staffing and running of these centers since they are normally activated for all-hazard disasters. See Credit under Discussion Item No. 8.

4. Other activities that may be evaluated out-of-sequence include:

    a. Nursing Homes
    b. Correctional Centers
    c. Radiological Laboratories
    d. Ingestion Pathway Field Teams
    e. Traffic and Access Control
    f. Dose Calculations for Recovery and Ingestion Phases
    g. Monitoring and Decontamination Facilities

5. It may be possible to play the Plume Phase of an Ingestion exercise out-of-sequence. The Plume Phase could stop with the protective actions and the Ingestion phase could be conducted up to several months later beginning with the general emergency and protective actions. This was done as a pilot study and as a tabletop ingestion exercise.

b. Evaluators should provide direct feedback to exercise participants immediately following the exercise. These "critiques" should not attempt to detail the seriousness of any inadequacies observed, but should allow the evaluators to provide positive feedback and general recommendations for improvement.

c. Immediate correction of issues identified should be allowed following completion of the exercise. For example, if inappropriate monitoring techniques were demonstrated, the evaluator could provide instruction on proper monitoring and then allow for immediate re-demonstration. The issue would be documented as an Area Requiring Corrective Action (ARCA) in the Standard Exercise Report Format (SERF), with the appropriate statement documenting the completion of corrective action.

7. There are additional objectives that could be satisfactorily demonstrated by response to an actual emergency or other hazard exercises.

At the present time, FEMA-REP-14 and 15 indicate that demonstration of objectives 32 and 33, unannounced and off-hours exercises and drills, may be satisfied by a response to an actual emergency. However, there are other objectives that, although there are some radiological aspects to them, contain major generic emergency operations for which credit could be granted. The objectives identified below are demonstrated during any disaster response. Objectives that could qualify for credit are:

Objective 1 (Mobilization)
Objective 2 (Facilities)
Objective 3 (Direction and Control)
Objective 4 (Communications)
Objective 12 (Media Information)
Objective 13 (Rumor Control)
Objective 15 (Special Populations)
Objective 16 (Schools)
Objective 17 (Traffic and Access Control)
Objective 19 (Congregate Care)
Objective 20 (Medical Services – Transportation)
Objective 21 (Medical Services – Facilities)
Objective 23 (Supplementary Assistance)
Objective 30 (24-Hour Staffing)
Objective 31 (Offsite Support for Onsite Personnel)
Objectives 32 and 33 (Unannounced and Off Hours Exercises and Drills).

8. Alternative approaches that can be used in conjunction with a streamlined exercise to demonstrate and confirm reasonable assurance.

All nuclear power plant sites currently have findings of reasonable assurance that have been confirmed in numerous exercises since the initial determination. The proposed exercise streamlining position paper allows for other, alternative approaches to be used, in combination with a streamlined full participation exercise, to demonstrate and confirm reasonable assurance. Discussed below are traditional components of a full-participation exercise that can be evaluated in an alternate way outside of the exercise. Other approaches may include, but are not limited to, the following:

- **Staff Assistance Visits**

  a. States and Utilities conduct many different training sessions during the year. FEMA staff could attend these sessions and provide immediate feedback to the attendees. FEMA would be providing on the spot feedback rather than identifying issues in an evaluation report. This approach would build a better relationship among REP partners and stakeholders (See Partnership Paper).

  b. States and Utilities are required to conduct a variety of drills during the year. If FEMA staff were to attend the drills, such as, communication drills, etc., evaluation of these activities could be included in the final exercise report. Again, this would result in some cost during work hours or evenings; however, it would reduce the cost of evaluators/ contractors during full-participation exercises.

  c. Personal interviews with players can be used in staff assistance visits, training sessions, and out-of-sequence drills, to verify credit for objectives demonstrated during other activities, etc.

- **Out of Sequence Demonstrations (See Discussion Item 6).**

- **Credit for Actual Events or Exercises Including Non-Radiological Events.**

  Many REP objectives are demonstrated all the time during natural disasters and exercises for other hazards. The following list identifies those exercise objectives for which we should allow credit:

  a. Mobilization, Objective 1, during any emergency this objective is demonstrated. In addition, most emergencies involve 24-hour staffing (Objective 30). Therefore, both objectives could be given credit. These two objectives could be merged into one objective.

  b. Facilities, Objective 2, especially those fixed facilities that we see during every exercise. (EOCs, Mass Care Centers, etc.)

c. Direction and Control, Objective 3, the areas not involved in radiological decisions.

d. Communications, Objective 4, we should see communications during any exercise. Often communications is the first thing that fails in a disaster. All communication equipment and backup systems will be used during any response activities. If documented appropriately, credit could be given for this objective.

The personal interview with players will be important in technical assistance visits, training sessions, and out-of-sequence drills, to verify credit for objectives demonstrated during other activities, etc.

For additional objectives, please see Discussion Item 7 under FEMA REP 14-15 Analysis.

- **Annual Letters of Certification**

The Annual Letter of Certification (ALC) is the perfect tool for state and local government to document self-assessments. Already, annual public information requirements, training completions, siren operability and maintenance verifications are submitted through this document. The ALC is certified by the Governor or his designee as to its accuracy. It could be expanded very easily to include information such as the following:

a. Monitoring equipment maintenance and calibration dates.
b. Dosimeter operability and maintenance records documentation.
c. KI requirements and shelf life.
d. Communications drill results.
e. Plan updates
f. Evaluation Reports

Verification of the documentation submitted in the ALC may be accomplished by site-visits.

a. There are several objectives geared to the verification that appropriate equipment is available for emergency workers. Potassium Iodide (Objective 14) calls for the evaluator to confirm that sufficient doses exist to be given to all emergency workers and institutionalized individuals. This process could be verified during a site visit by REP staff during normal duty hours. Contract evaluator costs would be cut; however, additional costs could be incurred for additional travel, etc. as this would be done outside the exercise process.

b. Monitoring equipment and dosimetry operation/maintenance verification is required on a regular basis (See FEMA Rep 14-15). Inspections of this equipment outside the exercise timeframes can easily be accomplished. FEMA Regional

staff would save money by performing these inspections during regular work hours, when maintenance is being performed on the equipment. Although, there would be some cost for FEMA staff there would be a cost saving by reducing the amount of evaluator/contractor time during exercises. Also, see Annual Letters of Certification and Out-of-Sequence Demonstrations.

- **Self-Assessments**

For those states where local jurisdictions are required to play, state evaluators could be utilized for those jurisdictions below the county level. The one problem with this approach is staffing. Many states may not have the resources necessary to perform this function. There may be other areas where state evaluation may be viable. When evaluations are performed by a state, response capabilities should be documented and provided to FEMA.

RECOMMENDATIONS

SAMPLE

GUIDANCE AND EVALUATION MANUAL FOR RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISES

REP PROGRAM
STRATEGIC REVIEW STEERING COMMITTEE

STATEMENT FROM THE REGIONAL ASSISTANCE CHAIRPERSONS ADVISORY COMMITTEE

The Regional Assistance Chairpersons Advisory Committee (RACAC) was charged by the Strategic Review Steering Committee (SRSC) to prepare an example of streamlining several objectives from FEMA REP 14/15 to be presented with the Streamlining Concept paper. The RACAC prepared this document to illustrate an approach to the rewrite/change of existing exercise guidance and evaluation material. The committee recognizes that there are other approaches including leaving REP 14/15 in their current form (with modifications necessitated by changes in other supporting documents); or altering current format to reduce unnecessary objectives (such as 30, 32, 33) and modifying each remaining objective based on customer responses to the strategic review, or to generate a totally new document. The attachment is a representation of an approach to this process.

OBJECTIVE X: RADIOLOGICAL EXPOSURE CONTROL

(Formerly Objectives 5, 14 and 29)

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers, and the capability and resources to implement protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

INTENT

This objective states that OROs shall be able to determine the radiation exposure received by emergency workers; provide for distributing, collecting, and processing of direct-reading dosimeters (DRD) and non-direct-reading dosimeters; provide for emergency workers to read their DRDs at appropriate intervals; maintain a radiation dose record for each emergency worker; and establish a decision chain or authorization procedure for emergency workers who are required to incur radiation at levels greater than routinely authorized emergency exposure limits. This objective should be evaluated in concert with Objective A, Radiological Protective Actions; Objective C, *Radiological Field Monitoring and Sampling*; Objective E, Radiological Monitoring and Decontamination; Objective F, *Radiological Laboratory Operations*; and Objective G, *Radiological Medical Response*. (See evaluation criteria from NUREG-0654 planning standards E, H, J, and K).

Whenever the plan requires, sufficient quantities, storage, and means for distributing radioprotective drugs to emergency workers, institutionalized individuals, and the general are available.

For assigning DRDs, emergency workers are categorized according to whether they will be working in an area of potentially high exposure rates (Category 1), or in an area of potentially low exposure rates (Category 2). Areas inside the plume EPZ are considered to be in Category 1. It is essential that emergency workers with assignments in this area have a means for measuring their radiation exposure at the beginning of the accident response.

Emergency workers assigned within categories 1 and 2 include all those whose services are needed to protect the health and safety of the general public during an emergency. These workers may be exposed to radiation from an airborne plume or from material deposited during a plume passage during their missions. Therefore, a means for measuring their radiation exposure be available at the beginning of the accident response. Individuals returning to restricted areas for necessary work (e.g., farmers feeding animals) are assigned to Category 2. (See evaluation criteria from Planning Standards E, H, J, K, and M.)

EXTENT OF PLAY

Under this objective, all activities are to be carried out using plans and procedures as in an actual emergency unless otherwise specified in the extent-of-play agreement.

DEMONSTRATION CRITERIA

NUREG	CRITERION 1
H.10, K.3.a J.10.e,f.	**OROS have dosimetry and KI available for emergency worker radiation exposure control.**

EVALUATION

OROs demonstrate the capability to assign non-direct-reading dosimeters to emergency workers, specify the type of dosimetry (film badge, thermo-luminescent dosimeters [TLD], etc.), maintain records of the serial numbers of dosimeters, and inform workers of where and when the dosimeters should be turned in for processing.

Also, each emergency response worker has access to a functioning dosimeter charger and understands its use. OROs assign DRDs with scale ranges appropriate to measurement of any administrative dose limits established by State or local jurisdictions, and measure the dose limits established by EPA 400 or superceding documents. OROs are able to provide documentation of calibration dates and inspection for electrical leakage in accordance with manufacturers specifications.

Sufficient quantities of KI are available for emergency workers, institutionalized personnel, and the general public (if applicable). KI supplies are within the listed expiration date and plans for distribution are available.

NUREG	CRITERION 2
K.3.b,4.	**Emergency workers demonstrate the use of dosimetry and KI and knowledge of exposure control procedures to manage radiological exposures.**

EVALUATION

OROs demonstrate that instructions are available on how to use individual and/or group dosimeters and take periodic readings. The DRDs must be zeroed and the initial readings recorded before deployment.

Emergency workers are aware of their maximum authorized exposure limit (administrative dose limit). If authorized to terminate their mission by their own decisions when a predetermined level is reached, emergency workers are aware of appropriate personnel to contact. DRDs shall be periodically read, and each **emergency**

worker has an exposure record or chart. Individual exposures are recorded (in Roentgens) at the end of each mission or shift, and emergency worker exposure records and KI ingestion documentation are given to a designated person.

NUREG	CRITERION 3
E**.7, J.10.e,f.**	**Instructions on the distribution and use of KI have been prepared and are available for dissemination.**

EVALUATION

The OROs have clear and definitive plans and systems in place to insure that KI is distributed and that instructions for ingestion are disseminated. OROs demonstrate the ability to implement the distribution of KI according to their plans and procedures. Instructions to emergency workers and residents on the use of KI should include the following information:

- Reasons for taking KI,
- Dosage and time within which KI should be taken,
- Information on where KI can be obtained or how it will be distributed, and
- Possible side effects.

NUREG	CRITERION 4
M.1,3, J.9,10.e.	**Implementation of decisions regarding controlled re-entry of emergency workers into the restricted zone are demonstrated.**

EVALUATION

OROs are prepared to provide briefings to re-entering emergency workers, including information based on As Low As Reasonably Achievable (ALARA) principles.

OROs demonstrate the capability to control re-entry and exit of people and to protect them from unnecessary radiation exposure. Control procedures for exiting the restricted zone following re-entry include monitoring people, vehicles, and equipment to avoid spreading contamination outside the restricted zone.

OBJECTIVE XX: DIRECTION AND CONTROL

(Formerly Objectives 3 and 23)

Demonstrate the capability to direct and control emergency operations.

INTENT

This objective provides that OROs demonstrate the capability to control the overall response to an emergency and the capability to request assistance from Federal agencies, nuclear and other facilities, organizations, individuals, and radiological laboratories. OROs also are prepared to provide resources needed to support these assisting external organizations. (See evaluation criteria from NUREG-0654 A, C, and N).

EXTENT OF PLAY

All activities described in the demonstration criteria for this objective shall be carried out in accordance with the plan, unless deviations are provided for in the extent-of-play agreement.

DEMONSTRATION CRITERIA

NUREG	CRITERION 1
A.1.d,2.a,b.	**Designated personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.**

EVALUATION

OROs shall demonstrate clear chains of command, their leadership and management capabilities, and their capabilities to accomplish the following:

- Delegate responsibility,
- Issue instructions to staff,
- Provide directions on use of the plan,
- Conduct staff meetings and briefings,
- Disseminate information,
- Resolve conflicts,
- Provide decision-making leadership,

- Consult with and issues instructions to staff and other organizations,

- Provide and clarify authorities needed for emergency action,

- Direct coordination with other OROs,

- Authorize implementation of PADs, and

- Provide for retention of essential information.

NUREG	CRITERION 2
C.1.a.,b.,C,3.,4.	**Assistance is requested for unmet needs from outside organizations (Federal, State, local, volunteer and private).**

EVALUATION

OROs demonstrate the capability to recognize and identify limitations in their own resources, determine circumstances that require outside assistance, secure required resources from external organizations, and track unmet requests to fulfillment.

Assistance from outside support agencies or organizations may be in the form of personnel, knowledge and expertise, equipment, supplies, services, or funding. OROs demonstrate knowledge of the points of contact for external organizations and the use of appropriate communication systems. If assistance is requested, the requestor should document agency, official contacted, time, and assistance requested.

NUREG	CRITERION 3
C.1.a.,b.,C.,3.,4.	**OROs demonstrate the capability to support and facilitate the response of external organizations.**

EVALUATION

OROs demonstrate the capability to provide support or resources requested by the external organizations that respond to the request for assistance. Examples of such support and resources include air fields, transportation vehicles, command posts, office space, telephone lines, radio frequencies, telecommunication centers, supplies, and equipment.

NUREG	CRITERION 4
N	**All activities described in the demonstration criteria are carried out in accordance with the plan, unless deviations are provided for in the extent-of-play agreement.**

EVALUATION

OROs demonstrate a capability to follow policies, implement procedures, and utilize equipment and facilities contained in the plans and procedures. OROs should demonstrate that they can follow sequences outlined in the various procedures and perform specified activities, as necessary.

OBJECTIVE XXX: PUBLIC INSTRUCTIONS

(Formerly Objectives 10, 11 and parts of 16 and 27)

Demonstrate the capability to promptly alert and notify the public within the plume pathway EPZ. Coordinate the formulation and dissemination of accurate and timely emergency instructions and information to the public throughout the radiological event.

INTENT

This objective concerns both the process by which the messages containing instructions and information are coordinated among OROs and the clarity, completeness, accuracy and timeliness of the messages. Procedures need to encompass the alert and notification emergency; and issuance of instructions and information for the general public in the plume and ingestion pathway EPZs during the emergency phase and in the post-emergency relocation, re-entry and recovery phases of a radiological incident. (See evaluation criteria from NUREG-0654 Planning Standards A, E, and J).

EXTENT OF PLAY

All alert and notification activities will be conducted as they would be in an actual emergency, subject to the extent-of-play agreement.

Exception areas must be selected for demonstration and evaluation. The public address system should be demonstrated with a test message along the route or at some agreed-upon location.

A current copy of preprinted information and instructions must be ready for rapid reproduction and distribution.

DEMONSTRATION CRITERIA

NUREG	CRITERION 1
E.5,6,7.	**Activities associated with primary alerting and notification sequences are acted upon urgently and completed within 15 (primary) or 45 (within exception areas) minutes of decisions by authorized offsite emergency officials to activate the alert and notification system.**

EVALUATION

OROs must demonstrate the capability to provide both an alert signal and an instructional message to populated areas throughout the plume pathway EPZ within 15 (primary) or 45 (within exception areas) minutes of the decision by authorized offsite officials to activate the alert and notification system. This capability must be demonstrated in

conjunction with all primary notification systems for the general population, including the Emergency Alert System (EAS).

The OROs must be able to alert and notify permanent and transient populations within 10 miles of the nuclear power plant and complete the following actions within the appropriate time after each decision to alert and notify the public:

- Provide emergency alerting and notification to the public (the following table is an example of the data requested for each timed alert and notification sequence);

ACTION	SEQUENCE #1	SEQUENCE #2	SEQUENCE #3	SEQUENCE #4
(a) Time offsite official's decision was made to notify public (start clock)				
(b) Time alert system was activated				
(c) Time EAS message broadcast was initiated				
*(d) Time "Primary Route Alerting" was completed				
*(e) Time "Exception Area Alerting" was completed				
*(f) Time "Backup Alerting" was completed				
*(g) Time "Supplementary Alerting" was completed				

* If applicable

- Select either an appropriate pre-scripted emergency instruction, modify a pre-scripted emergency instruction, or formulate an ad-hoc emergency instruction. Due to the time limitations of the EAS system, the message cannot exceed 2 minutes in length. The message must contain at a minimum, affected

jurisdictions, the site status, emergency classification level, protective action decision (PAD), reference to the public information brochure and a closing statement requesting the public to stay tuned to the EAS station. Subsequent special news broadcasts concerning descriptions of the affected geographical area in terms of familiar landmarks and boundaries, location of reception centers and other pertinent information must be provided immediately following the EAS broadcast.

- Coordinate activities with other OROs prior to release of the message, as required, for activating the alerting system and timing and choosing the contents of the notification message.

- Coordinate with the broadcast station(s) to ensure that the correct message is broadcast, and that current messages are repeated as appropriate.

- Receive verification of the ad hoc message or instructions for use of a pre-scripted message from the station.

- Activate the alert signals.

- Complete all primary route alerting and notification activities when applicable. This includes providing messages over the mobile public address system.

- Initiate dissemination of the emergency message to the public via the EAS and any other means specified as primary in the ORO plan. This includes special notification devices. Parents of school children must be notified of protective actions.

- Promptly provide copies of EAS messages to appropriate OROs (e.g., risk and support counties, State and joint information centers).

NUREG CRITERION 2

E.6. OROs use supplementary route alerting to complement primary route alerting and/or notification methods.

EVALUATION

OROs may choose to provide supplementary route alerting and notification. Because this emergency activity is discretionary, demonstration of supplementary route alerting and notification will be negotiated in the Extent-of-Play agreement.

NUREG CRITERION 3

E.5,7. All messages accurately reflect the protective action decisions made by responsible authorities.

EVALUATION

OROs must demonstrate the capability to ensure that emergency messages are consistent with decisions made by the appropriate offsite officials. They should be able to convey information accurately to people responsible for developing notification messages or selecting and modifying pre-scripted messages. OROs will provide emergency instructions to the broadcast station(s) for dissemination. This demonstration may include recording the message directly on a tape for use by the station, accessing the station for a live transmission, or using other means to ensure that messages are read correctly.

NUREG CRITERION 4

E.5,7. Emergency messages contain instructions and information that are understandable and can be easily implemented by the public.

EVALUATION

OROs must demonstrate the capability to use familiar landmarks and boundaries to delineate the geographic areas covered by protective actions described in an emergency message. Descriptions may include site-specific landmarks, such as rivers, railroad tracks, buildings, and local government jurisdictions.

OROs must ensure that messages are internally consistent and that information in an early portion of the message is not contradicted by information in a later portion of the same message. The contents of the messages should be adapted to address misinformation that may have a negative impact on the public response. Emergency messages should contain information from the rumor control staff, as appropriate. The public, both in areas covered under PADs and outside those areas, must be informed to stay tuned to the broadcast station(s) for further emergency instructions and information.

The emergency messages must be accurate when compared with current accident status information provided by the licensee. Messages must contain clear language and instructions understandable to the public.

OROs must demonstrate the capability to provide instructions to the public on implementing the recommended protective actions. These instructions must indicate when and by whom these actions should be taken; must be consistent with, and refer to, previously distributed informational brochures; and must be complete enough to ensure that people without a brochure will know how and when to take appropriate actions.

Subsequent messages need to be developed that contain: instructions for transients; items to take along when evacuating; evacuation routing; locations of reception centers; instructions and information for parents of students, transportation dependent individuals, and special populations; instructions and information on protective actions for food and water, and information related to relocation, re-entry and recovery activities.

Updated instructions and information must be provided in a way that clearly distinguishes current and previous instructions. This demonstration should be supported by an accurate and current log of previous messages available at all times to message preparers.

ORO s must demonstrate the capability to develop emergency messages and provide broadcasts in a non-English language when required.

NUREG	CRITERION 5
A.1.b, E.5,7.	**OROs coordinate content of emergency messages with all appropriate staff, organizations, and jurisdictions.**

EVALUATION

ORO s must demonstrate the capability to coordinate with each other and with the appropriate support organizations (e.g. American Red Cross, Salvation Army) and internal staff on the content of emergency messages. This coordination may include sharing the information, joint development of message content, or providing direction on message contents to several organizations from a central coordinating organization. Emergency messages must be periodically rebroadcast even if there is no change in the emergency status.

ORO s maintain copies of all instructional and informational messages that may be used by the Public Information Officials (PIO) and rumor control staff.

NUREG	CRITERION 6
E.5,7, J.9,11.	**When ingestion pathway measures are exercised, preprinted instructions and information are available for rapid reproduction and distribution to pre-selected individuals and businesses.**

EVALUATION

ORO s must demonstrate the capability to maintain copies of instructions and information for ingestion pathway actions so that they may be rapidly reproduced and distributed to predetermined individuals and businesses. A listing of organizations and businesses (including addresses, contacts, and telephone numbers) that will receive ingestion-related materials during actual emergencies must be available.

September 12, 1997

FEMA Strategic Review Steering Committee
Concept Paper: Focus on Radiological Aspects of REP
vis-a-vis All-Hazards Aspects of REP

ISSUE

Would the Radiological Emergency Preparedness (REP) Program be more effective and streamlined by focusing more on radiological activities and less on non-radiological activities?

BACKGROUND

During the course of the review of the issue of inclusion of REP in the All-Hazards (generic) approach to emergency planning, a related issue was identified by the Steering Committee concerning whether the efforts of State and local governments as well as FEMA should be focused on those activities in REP unique to radiological emergencies and less on the non-radiological aspects common to all emergencies. The issue was approached by first identifying those planning standards and evaluation criteria in NUREG-0654/FEMA-REP-1, Rev.1, and the Exercise Objectives in FEMA-REP-14 which could be considered unique to radiological emergencies and those activities common to all emergencies. Secondly, the regulatory basis for REP as presented in NRC and FEMA regulations and the NRC/FEMA Memorandum of Understanding (MOU) was examined to determine if there were any regulatory impediments to emphasizing the radiological aspects of REP while shifting the preparedness for the non-radiological aspects of REP to other all-hazards plans. Finally, the extent of changes that would be required in FEMA planning and exercise guidance documents to accommodate this change in REP program emphasis were examined. The Steering Committee was cognizant in its review and analysis that, although a shift in emphasis might occur, the bottom line remains that all EP planning standards must still be met and the resulting REP program must continue to provide reasonable assurance. However, how this would be accomplished may differ from what is currently in place.

ANALYSIS

In the analysis of the All-Hazards issue, the subject of plan format was addressed. Several States have modified their plans and "integrated" the REP-specific elements into the general body of the plan, the result being that such a format resembles the function-based, all-hazards Emergency Operations Plan (EOP) format recommended in SLG-101, *Guidance for All Hazards Emergency Planning* (September 1996). However, if the all-hazards approach is simply perceived as a re-formatting of the REP plans to fit the all-hazards EOP format, then there is little to be gained, from a strategic viewpoint, by considering REP under all hazards. Regardless of the plan's format, the emergency management personnel working with it must be knowledgeable in its contents and procedures and be able to demonstrate the plan's effectiveness in an exercise.

Review of Planning Standards and Exercise Objectives

A review of the Planning Standards indicated to the Steering Committee that it is not useful to try to ascribe Planning Standards as being radiological or non-radiological in scope. The Planning Standards usually contain aspects of both. The Steering Committee determined it would be more useful to look at the Exercise Objectives in FEMA-REP-14 and, within those Objectives, to the Demonstration Criteria.

The Committee's initial review indicated that Objectives 15, 16, 17 and 19 appear to be non-radiological functions. Objectives 1 - 4, 10 - 13, 23, 30, 32 and 33 appear to be All-Hazards, but contain radiological components. Objectives 5 - 9, 18, 20 - 22, 24 - 29 and 31 appear to have only radiological functions.

Emphasizing the radiological aspects of REP, however, does not eliminate the non-radiological aspects from concern. The non-radiological activities would still need to be verified as adequate, even if demonstrated in an all-hazard framework.

The States, including those with all-hazards plans, have been demonstrating the capability to meet the REP-14 Objectives in exercises. The question is whether it is practicable, with the maturity of the REP Program, to separate the Objectives, Demonstration Criteria and Points of Review that are considered non-radiological, and, if so, which ones? It could be problematic. For example, Objective 4, Communications, appears to be a generic preparedness and response function. However, closer inspection of some of the Demonstration Criteria reveals specific radiological functions, e.g., communications between plant operators and the Emergency Operations Center and communications from the EOC to Field Teams monitoring the environment. Another example is the NUREG-0654 element which requires continuous 24-hour emergency operation, and therefore staffing. This element is described in Objective 30, where once every six years a shift change is demonstrated with Shift 1 briefing Shift 2 on the status of the emergency and the emergency response. A fundamental question for these Objectives, if they were under consideration for separation, would be: how important are these activities in connection with ensuring an adequate level of preparedness? Would separating these activities reduce preparedness?

There is also a much larger consideration, and that is the fundamental concept of the integrated exercise. NRC and FEMA regulations require an exercise to test the integrated capabilities of appropriate State and local government authorities and utility emergency personnel, and include testing the major observable portions of the onsite and offsite emergency plans, and mobilizations of State, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. In order to conduct a truly *integrated* exercise and test real-time capability, it is necessary to evaluate generic response functions such as Emergency Communications, Direction and Control, and Alert and Notification (EBS/EAS) along with the radiological functions. It would be difficult to have an exercise that only involves radiological activities when the "glue" for demonstrating an integrated response to a simulated emergency lies in the non-radiological functions.

Emphasizing the non-radiological aspects of REP may require some fundamental changes in the current REP Program. It may be difficult to separate some of the all-hazards/generic response functions from the radiological functions. Issues which need to be addressed include such activities as mobilization of specific response staff with capable back-up for continuous 24-hour operations; activation of an Emergency Operations Center with appropriate equipment to provide for essential emergency communications; and supporting decision-makers with sufficient information for developing and implementing protective actions for the public.

Perhaps an alternative approach in separating the radiological aspects from the non-radiological aspects would be doing the radiological response activities in discrete drills and combining these drills with "readiness appraisals," expanded exercise credit, and an expanded Annual Letter of Certification. Under this approach, Discrete Drills would entail:

- Field Monitoring Teams demonstrating their expertise in using survey meters and taking samples;

- Emergency workers demonstrating their capability and knowledge in using dosimetry, in radiological exposure control and decontamination and in KI use;

- Those with Direction and Control responsibilities showing an understanding of the technical information coming from the utility, radiological health officials, etc.

- Emergency medical staff (ambulance and hospital staff) demonstrating their capability, and the medical protocols for treating contaminated individuals; and

- Health Physics Drills including demonstration by the staff of their capability to do dose projections and dose assessments.

In conjunction with these discrete drills, there would be "readiness appraisals," that is, walk-throughs, inspections, inventory/roster reviews, etc. Such a "readiness appraisal" could apply to an Emergency Operations Center, and may satisfy many of the non-radiological requirements in FEMA-REP-14. In some situations, exercise credit may be given to State and local organizations that respond to real emergencies or certain non-radiological response activities. And the State assessment of plans and preparedness would be reported in an expanded Annual Letter of Certification. The non-radiological objectives could be demonstrated in all-hazards exercises, with the results coordinated with the evaluations of the discrete drills involving the radiological functions.

This alternative approach may permit FEMA to make findings on the adequacy of offsite plans and preparedness. Such an approach could, perhaps, provide an opportunity for requiring less frequent integrated REP exercises.

Review of Regulatory Basis

A review was conducted of the regulatory basis for REP including the NRC and FEMA regulations and the NRC/FEMA Memorandum of Understanding (MOU) to determine if there were any regulatory impediments to focusing on those activities unique to radiological emergencies in REP and less on those aspects common to all emergencies. Emergency preparedness (EP) is covered in NRC regulations 10 CFR 50.33, 50.47, 50.54, and Appendix E to 10 CFR 50, and in FEMA regulations 44 CFR 350, 351, and 352. FEMA is responsible for assessing the adequacy of offsite EP and providing its findings and determinations to the NRC. For operating nuclear power plants, the NRC bases its findings on the overall state of emergency preparedness on a review of FEMA's findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented and on the NRC's assessment of the adequacy of the licensee's onsite emergency plans. (50.54(s)(2)(ii)) The MOU indicates that FEMA’s findings on preparedness are based on an assessment that the offsite plans are (1) adequate as measured against the planning standards and evaluation criteria of NUREG-0654 and (2) that there is reasonable assurance the plans can be implemented as demonstrated in exercises. This assumes that a periodic exercise (now biennial) will be conducted to test the plan and to verify its implementability.

September 12, 1997

REP Program Strategic Review Steering Committee
Concept paper: Partnership In The Rep Program

ISSUE

Should the role traditionally assumed by FEMA in its interaction with the States, in the REP program be modified such that a greater FEMA/State partnership is achieved?

BACKGROUND

Over the sixteen years of the REP program, FEMA's role has traditionally been that of evaluator of the State and local ability to implement emergency response plans. With the evolution of Performance Partnership Agreements and FEMA's strategic review of its REP program, a desire has arisen to reevaluate this traditional relationship and determine if a relationship defined more in terms of a State, Tribal Nations and local government partnership is appropriate.

ANALYSIS

Those advocating this approach propose that all partners have the same goal of protecting health and safety of the public. Further, the rationale continues, State, Tribal Nations and local government have the primary responsibility for protective action decisions and implementation, and, in combination with local responders, first-line response. As such, their role is integral to effective emergency preparedness and response and on this basis they should be considered partners with FEMA in accomplishing this end.

There are several concepts that can be considered related to achieving an enhanced partnership. In general, a greater partnership may be described as one that is less paternalistic, one in which each partner recognizes each other's strengths (and weaknesses), one in which FEMA exerts less oversight, one in which there is a greater emphasis on results rather than the process used to get there, and one in which open communication is practiced.

There are numerous initiatives, which might be undertaken in the name of developing a greater level of partnership in the REP program. For ease of evaluation at this point, they are grouped into primary topics.
[1]

(A) Performance

A number of comments centered on giving more latitude to the States, Tribal Nations and local governments and reducing Federal oversight in the performance of REP programs. The guiding principle for the Federal government as part of the National Performance Review is

[1] * The roles and responsibilities assumed by Tribal Nations in the REP Program may vary from site to site.

to develop performance partnerships with State and local governments to promote both increased flexibility and accountability. The key feature of the partnership is the encouragement of multiple approaches to meeting jointly designed objectives.

Within the context of the REP program, certain specific performance themes related to increasing partnership are developed below.

1. Increase flexibility/latitude for partners in how to carry out REP requirements.

   The maturity of the REP program has allowed an excellent definition of the basic areas of capability (i.e. public education and information, emergency facilities and equipment, emergency classification, etc.) necessary to protect the public from a serious nuclear power plant accident. NEMA and others make the case that the States have an established record of performance in REP which verifies their capabilities to control the execution of their own programs. Increased flexibility would also allow differences to be recognized in program implementation.

   This combination of matured program definition along with increased experience levels lends itself to the next level of delegating more responsibility. For further discussion, refer to the Delegated State Program Issue Paper. Alternately, a revised REP 14/15 could recognize a greater flexibility/latitude, as could training evaluators to focus on outcomes rather than process.

2. FEMA, States, Tribal Nations and locals, in addition to utilities, would work together to determine the appropriate Goals and Objectives to support the ultimate Mission of protection of the public.

   Overarching REP Goals could be jointly established (Federal, State, Tribal Nation, local, utility) to drive the activities at all levels. Then, objectives with specific, measurable results would be agreed to by all parties on a uniform, national basis. These objectives provide a checkpoint to assess whether the program is achieving the consensus goals and define the actual impact on the public being served, rather than measuring the level of effort expended by the particular organization.

3. Methods of accomplishing goals left to the discretion of States, Tribal Nations and local governments.

   After developing goals and objectives as discussed in item 2. above, States, Tribal Nations and local governments would then work with FEMA to develop measurable outcomes to assess achievement of these goals and objectives. These are quantitative indicators uniquely developed to each jurisdiction and many are already in place. States, Tribal Nations and local governments would be given flexibility in how they carry out guidance within the context of meeting goals and objectives.

4. Incorporate REP goals into the Performance Partnership Agreements (The PPAs are 5-year strategic plans which the States broker with FEMA. The PPAs are implemented by States and their goal is to provide greater state flexibility in achieving goals, while at the same time improving accountability. The focus is on results rather than the process.)

   The use of the PPA process allows States to be treated as emergency management partners. Inclusion of REP goals and performance measures in the PPA will encourage the integration of REP into the overall State emergency preparedness mission. Since most States are required by their own legislatures to have a strategic plan, this will permit the States to present all aspects of their emergency management mission in one strategic document, irrespective of funding source. Note though that actual use of a PPA document would be optional because if what is outlined in items 2. and 3. above has been accomplished, the underlying basis of a PPA has been done also.

Advantages to this type of performance approach include increased flexibility in carrying out REP programs, including the ability to ensure that plans and exercises apply to real events rather than simply to achieve a goal of passing an exercise. A potential disadvantage of this approach is that the development of REP goals and performance measures (and their assessment per performance indicators) are time consuming.

(B) Evaluation –

Note: This section, which was previously included in the July 3, 1997 version of the Partnership Concept Paper, has been consolidated in the Exercise Streamlining Concept Paper.

(C) Policy

Partnership in the policy area effectively means greater stakeholder involvement in its development. This policy involvement thus can be divided into two distinct areas: the strategic review process itself and guidance and policy developed as part of the ongoing program. The former will be considered in detail as part of the evolving strategic review process. The latter will be the focus of the discussion here.

A greater partnership in the policy area could be accomplished through a variety of means including discussion of policy issues during workshops, conferences, or specially gathered meetings. The success of the Standardized Exercise Report format development could serve as a model for future endeavors (a first draft was provided for comment with the resulting second draft discussed at a meeting of State, utility, FEMA and NRC regional representatives). Whatever stakeholder involvement is put in place for the Strategic Review process would provide valuable lessons learned for what might be viable on a more permanent basis. Naturally, consideration of FACA would continue. In any case, for

partnership to evolve in the policy area, the concept must be given more than "lip service"; stakeholders must be made to feel that their views are given full consideration. At the same time, FEMA must remain objective concerning the goals of the program and ensure that stakeholder self-interest does not become the driving force in future policy development.

The pros of continuing stakeholder involvement in the REP program policy area include: (1) greater ownership of policy changes and thus improved acceptance of such changes, (2) improved expediency of FEMA becoming aware of implementation issues and proposed alternatives, (3) a resulting greater consistency among FEMA regions of the developed policy, and (4) increased FEMA access to a broader base of technical expertise and experience. In contrast, cons include the need for greater in depth analysis of stakeholder positions (perhaps using individuals with the appropriate technical expertise) to ensure appropriate policy is accepted.

(D) Technical Assistance

Numerous comments were received about FEMA increasing the technical assistance it provides to shifting its emphasis from prescriptive evaluation to technical assistance to States, Tribal Nations and local governments. For the purposes of this discussion, "technical assistance" herein refers to both planning and programmatic assistance and specific assistance on radiological issues.

The benefits of increasing such technical assistance include furthering the partnership relationship because the assistance would be offered in a non-evaluative forum. FEMA's role would move away from being primarily an evaluator toward being a greater facilitator and educator. FEMA would in an expanded way assist and support the States, Tribal Nations and local governments. The idea of increased technical assistance is closely tied to the idea of improved customer service.

From a resource standpoint, FEMA may have to shift resources from other areas (evaluation perhaps) in order to provide a greater level of technical assistance.

Means of increasing FEMA's technical assistance could include:

1. FEMA could sponsor technical assistance conferences throughout the year. Such a conference could allow FEMA the opportunity to share its observations gathered from years of REP exercises. This type of conference with a national reach could be supplemented by regional or local seminars.

2. FEMA could prepare an internet web site for technical assistance.

3. More emphasis could be placed on the process used in correcting issues raised during drills and exercises and less on simply grading. Redemonstration during drills would

provide a better learning environment and present an increased collaborative relationship between FEMA and the State, Tribal Nation and local organizations.

4. FEMA's courtesy evaluations during rehearsals could be continued or perhaps expanded. They are especially helpful in training and preparedness because they allow evaluators to share their extensive experience. At the same time, the courtesy evaluations are not threatening absent the evaluation and are thus conducive to learning and exchanging information.

5. FEMA could encourage more conference calls as a means to address issues rather than relying on written communications. This more open form of communication will increase partnership and the efficiency of the REP program through more expedient resolution of issues and answers to questions.

6. FEMA could take a more active role in implementation of the Emergency Alert System (EAS).

7. FEMA could assist in obtaining data on special needs populations (privacy issue).

8. FEMA could provide a greater level of assistance to States, Tribal Nations and local governments in improving their emergency preparedness plans.

9. FEMA liaisons could spend more time in the field to become more familiar with particular sites and in the process achieve better relationships with various levels of government. Such increased number of site visits would serve to provide ongoing technical assistance. Funding would be a consideration.

10. FEMA could provide greater evaluation and insights into how the continuing fast pace of technological changes impacts the REP program.

11. FEMA could participate in State, Tribal Nation and local training programs.

12. FEMA could provide technical assistance to States, Tribal Nations and local governments in implementing corrective actions resulting from exercises.

13. FEMA could work with other Federal agencies to identify key radiological monitoring and assessment capabilities, determine where additional effort is needed, and work to accomplish those activities, needs and then satisfy those needs.

It is interesting to note that the types of technical assistance suggested are largely in the programmatic or planning areas. Assistance of a clear technical nature is absent. In fact, comments received suggested either that FEMA refrain from providing technical radiological information or expand its own expertise in health physics and radiation sciences. FEMA can improve its technical guidance by (a) ensuring that cognizant RAC members are utilized for

this purpose, (b) issuing guidance as joint FEMA/NRC/EPA guidance, and (c) including stakeholders in its development. Should FEMA radiological expertise be cultivated, FEMA could provide names of contacts that could be called with questions on guidance. Even if FEMA obtains in-house technical expertise, serious consideration should be given to the appropriateness of FEMA developing technical standards in areas, which impinge on other agencies' statutory responsibilities. FRPCC-developed materials may be incorrectly interpreted to be solely FEMA documents because FEMA prints and distributes them so there may be merit in obtaining FRPCC letterhead and issuing documents under the auspices of the FRPCC, when appropriate.

The major pros of increased technical assistance would be providing States, Tribal Nations and local governments more of the type of assistance they need from FEMA in order to improve their radiological emergency preparedness programs. The primary con of this shift in emphasis is the FEMA resource issue. It becomes less onerous if resource savings can be found in the evaluation area or elsewhere. The other resource component of course is the level of radiological expertise residing at FEMA.

(E) Federal Exercise Participation

Increased Federal participation in REP exercises would give partners the needed experience of operating with the various Federal agencies and knowing what resources are available in radiological emergencies. Criticism includes that the Federal government has a significant role in response but does not subject itself to the same expectations which it places on States, Tribal Nations and local governments. By participating in REP exercises (specifically greater participation in ingestion and relocation, reentry, and recovery exercises), the Federal agencies allow themselves to be critiqued (refer to Section (B), item 1.) and learn from the process as do the States, Tribal Nations and local governments. Partnership would be furthered by such increased Federal involvement. Lack of participation in exercises past the plume phase leaves players wondering whether the Federal agencies are indeed prepared to deliver assistance and whether plans to accomplish and coordinate assistance are in place. The benefit to the Federal government of fuller participation is to uncover those shortcomings in our own preparedness schemes (in particular with our interrelationships with each other) which could prove disastrous and/or embarrassing in a real event. Federal participation would also allow testing of the FRERP organization and the exercising of interagency cooperation.

A further benefit of Federal participation is the increased realism in the scenario. Negative training is a likely result when appropriate Federal participation is lacking and thus one could argue that there is little value to post-plume phase exercises which lack appropriate Federal participation. FEMA could take a lead role in assisting the States, Tribal Nations and local governments to use FRMAC most effectively.

Naturally, the biggest drawback to increased Federal participation is resources. The appropriate management level of each affected agency (FEMA, DOE, NRC, EPA, USDA, HHS) would have to agree to make this a priority by providing the required staff. In addition, any internal agency procedures not developed would require resources to complete. Resources would also be required for interagency coordination to achieve exercise participation and for addressing outstanding issues associated with exercising the Federal role.

The above elements do not represent an all-or-nothing proposition. All or some of the conceptual items can be implemented depending on how partnership is to be defined in REP and the degree of partnership desired.

Areas of Overlap with other concepts being explored

1. The Performance element of this paper is closely related to the PPA concept and the results vs. outcome paper.
2. The Policy element is tied to the stakeholder involvement in the SRSC process itself and indeed that is one component of the Policy element. What is determined applicable for this process can certainly serve as a pilot program of sorts for future involvement of stakeholders in policy development endeavors.
3. The Technical Assistance element is tied to the resource question, and specifically the radiological assistance component relates to the use of contractors and whether FEMA should obtain in-house health physics and radiological expertise.
4. The Federal Exercise Participation element is related to questions concerning Federal coordination both in obtaining agreement to increase Federal participation and in actually implementing this policy in exercises. Federal resource constraints will presumably be a major factor.
5. In addition, partnership type elements may be used as incentives for participation in a Delegated State program. For example, Delegated States may be given a priority for technical assistance and/or participation in policy development.

RECOMMENDATIONS

To be determined.

REP Program Strategic Review

Transcripts from the At-Large Stakeholders Meetings

The transcripts are provided in portable document format, viewable through Adobe Acrobat Reader.

San Franscisco, December 2, 1997

St Louis, December 4, 1997

Washington, DC, December 5, 1997

Updated: February 20, 1998

TRANSCRIPT OF PROCEEDINGS

In the Matter of	
	Western Territory
RADIOLOGICAL EMERGENCY	Regions 8, 9 and 10
PREPAREDNESS PROGRAM	
STRATEGIC REVIEW	
At-Large Stakeholders Meeting	

Pages: 1 through 62

Place: San Francisco, California

Date: December 2, 1997

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UNITED STATES FEDERAL EMERGENCY MANAGEMENT AGENCY

In the Matter of	
	Western Territory
RADIOLOGICAL EMERGENCY	Regions 8, 9 and 10
PREPAREDNESS PROGRAM	
STRATEGIC REVIEW	
At-Large Stakeholders Meeting	

PALACE OF FINE ARTS

AUDITORIUM

SAN FRANCISCO, CALIFORNIA

TUESDAY, DECEMBER 2, 1997

9:30 a.m.

Reported by:

George Palmer

APPEARANCES

Ray Williams, Acting Regional Director, Region 9; Deputy Regional Director, Region 10

Rick Auman, Facilitator, Human Technologies

Anne Martin, Deputy Director FEMA Headquarters Exercise Division; Chairperson, Strategic Review Steering Committee

Sharon Stoffel, Region 1, Boston

Mary Lynn Miller, Region 4, Atlanta

Stanley MacIntosh, Region 2, New York

Falk Kantor, Member, Strategic Review Steering Committee, Nuclear Regulatory Commission

Tom Essig, Nuclear Regulatory Commission

Bill McNutt, FEMA

Marcus Wynche

Bob Bissell, RAC Chairperson, Region 7, Kansas City

Janet Lamb, RAC Chairperson, FEMA Region 3, Philadelphia

Woody Curtis, RAC Chairperson, Region 5, Chicago

Steve Borth, FEMA, EMI

Tammy Doherty, FEMA, Region 9, Seattle

Rose Mary Hogan, Nuclear Regulatory Commission Headquarters

I N D E X

I N D E X

P R O C E E D I N G S

9:30 a.m.

MR. WILLIAMS: I'm Ray Williams, the Acting Regional Director of FEMA Region 9. And we're glad to sponsor this meeting of the Western Territory, which is FEMA Regions 8, 9 and 10. That's Denver, Seattle and San Francisco. It's basically the west coast.

In particular I am glad to be the one to welcome you here to this western meeting because in addition to being Acting Regional Director of FEMA Region 9, I'm also the Deputy Regional Director of FEMA Region 10. So I have roots in both regions, two out of the three.

FEMA received its mission for off-site nuclear preparedness for commercial nuclear power plants in 1979, as a direct consequence of the Three Mile Island incident. It was the first mission, first major mission that was added to our agency. We had been created by President Carter that same year.

Now the President's action in giving us responsibility was a direct result of his seeing that the protection of public health and safety around a nuclear power plant is a most serious business.

This public meeting that I'm welcoming you to here this morning is a clear indication that we continue to

take our off-site preparedness responsibilities very seriously.

The Strategic Review Steering Committee has worked for over a year to examine various aspects of our radiological emergency preparedness program. We call that REP. It's to big to say in one phrase. To look at new ways to better implement that REP program.

We're making a huge effort to take a look at our current REP program to see if there's a way we can do a better job to protect the health and safety of the public. This is consistent with the President's initiative when he first came into office to reinvent the government.

To insure that we have the best information the Committee is soliciting input from many sources. This meeting is another step in continuing that effort to be sure that they've heard from all parties that have information they'd like to impart, an opinion, before making any recommendations for change.

So I encourage you to take the opportunity to provide feedback to this Committee. That's the sole reason that they're here. They know that you've got important information to provide, so please take the time to provide it. It looks like we'll have plenty of time.

I feel confident that this is going to be a very

productive meeting, and I want to thank you in advance for helping us to restructure the REP program to further enhance FEMA's preparedness effort.

I'd like to introduce Anne Martin, who is the Deputy Director of our Exercises Division at FEMA Headquarters. And she is Chair of the Strategic Review Steering Committee. Anne.

MS. MARTIN: Thank you very much, Director Williams, for setting the stage for our meeting today. And, thank you, for joining with us today.

To begin the program we'd like to provide you an overview of the strategic review process, where we've been, how we got to where we are today, and where we're going, of course.

As Ray mentioned, the program -- FEMA's responsibilities with the program began in December of 1979 when FEMA took responsibility or the lead for off-site radiological emergency response planning. The mission at that time, and it has not changed, and it will not change, it's part of the strategic review, is the protection of the public health and assuring the public safety around commercial nuclear power plants.

Well, the program evolved and grew for the next 15 years, and roughly in February 1994 through September of

1996, the National Emergency Management Association, several of their subcommittees issued resolutions which they passed on to FEMA concerning the Radiological Emergency Preparedness Program.

In 1994 through 1997 as the National REP Conference met in their yearly meetings those attendees proposed changes, and they also were passed on to FEMA as an outgrowth of their meetings.

In May of 1995 the Nuclear Energy Institute prepared a white paper, which was given to FEMA, concerning suggested changes to the REP Program. And you may recall that in February of 1995 FEMA held what is popularly known as the Kansas City meeting. And that was the meeting to streamline exercise reporting and it resulted in the SERF, or the Standard Exercise Report Format, which is currently in use.

Other than the SERF report, there have been no major changes to REP program since it's beginning in 1979. So, in June of 1996, bearing in mind the resolutions that had come from NEMA, the NEI white paper, and also comments that had come in from the National REP Conference, as well as other state and local entities, FEMA Director, James Lee Witt directed that there would be the first comprehensive review of the REP program. Of course, this was 17 years

after the program had begun and many things had changed since 1979.

There were also a couple of items going on on the national stage that had a bearing on the FEMA REP review. That was the national performance review that was set in place by the current Administration, and also the Government Performance and Review Results Act, which was directed at the federal government, that the federal government take an in-depth look at programs such as REP that had been ongoing for a number of years, to look at performance criteria, to look at the results being attained from the energy put on those programs; and also outlined a model. And that's the model that we used as a steering committee in outlining the REP Strategic Review.

Now there were two other acts that influenced the strategic review, the evolvement of the way we would carry it out. One of those is the Federal Advisory Committee Act. You may be familiar with that. That's an Act whose responsibility lies with the General Services Administration. And it governs the federal government interaction with nongovernmental entities.

To have the public participate in the REP Strategic Review it would have to be done through this Act, the Federal Advisory Committee Act. Federal advisory

committees are probably a two-year process to establish. The process is undertaken on those activities that are deemed to be of a long term or continuing process. And the REP Strategic Review has a sunset provision in it.

The other act that governed the strategic review is the Unfunded Mandates Reform Act. That's an Act that was signed by President Clinton in March of 1995 and it indicated that federal, state and tribal governments did have the responsibility and the federal government had the responsibility to move them early on, as early as possible prior to the issuance of any rule or any procedures that would impact them.

And it also directed that federal departments and agencies would consult with a wide variety of state, local and tribal government entities.

I mentioned earlier that the Government Performance and Results Act model was what we used in the strategic review of the REP program. And that model dictates that there be a needs assessment of the program that's being reviewed. That the objectives be revalidated; be very clearly stated; be revised, if necessary; that strategies be developed for the review; and that there be stakeholder involvement in the review.

Before you go on I wanted to mention a little

bit. The needs assessment, we actually went out to the public at large to assess the needs. That was through the Federal Register with an announcement.

The objectives, the objective has not changed since the initial mission in 1979. The objective was still to be protection of public health and safety.

And the strategies we developed for this review, I'll be talking to you about those with the next Vugraph.

And, of course, the stakeholders I mentioned, state, local, tribal. We had a meeting in September, the federal forum. And then we're here at the at-large stakeholders meeting. And I'll elaborate on that in just a couple of seconds.

Okay, Tom. Mentioned the strategies for the review. Typically we have done planning using the linear planning model. That is, as a federal entity, headquarters and regions, we issue a draft plan. We issue a draft document. Receive comments on that document, and then typically go into implementation.

For the REP Strategic Review we looked at another model to use, and that is what's called accordion planning. Now, if you'll take note, the circles on this transparency indicate the Strategic Review Steering Committee, and each of those blocks indicate the stakeholders.

The first circle, Strategic Review Steering Committee, met, developed certain concepts, and I'll be speaking more to those in just a moment. And then we went on that first square, expanded out to our state, local and tribal government for stakeholder input.

Came back in, Strategic Review Steering Committee. Went back out, expanded back out to the federal forum, which was held in Dallas in November. And, again, the final, the public-at-large stakeholders. We're here at this meeting today, and then we'll be meeting in the midwest and on the east coast later in the week.

Based on the input from all of these meetings, and as they impact on the concept papers that will be presented to you very shortly, the steering committee will be developing a draft document. Then that document, the input again will be expanded out to the public at large. Those draft concepts will be published in the Federal Register. It will be published on the FEMA website. And it's after receiving those comments that the steering committee would formulate additional recommendations. And only after that we would go into implementation.

To give you a little bit more background, in July of 96 the Strategic Review was announced in the Federal Register. This was a Federal Register announcement that

went out just, no holds barred; 120-day comment period. And we said to the public, give us your comments on the REP program, anything that you feel that needs to be changed. There were no parameters to these comments other than the primary objective, which is maintaining the public health and safety.

A 120-day comment period, as I mentioned. During that 120 days we had 60 respondents who came in with 178 specific comments. You can see here the major topic areas. Exercises was a major topic area. General rep policy and guidance. And then a few comments on rep plans.

I haven't mentioned the Strategic Review Steering Committee. This is a list of the steering committee. They are all here with you today. And you'll have an opportunity to, if you haven't met them already, you'll be hearing from them as they comment on the concept papers.

The steering committee, what I'd like to point out to you is that the steering committee was put together with some thought as part of the strategy for attaining a true strategic review of the REP program.

We have NRC, the Nuclear Regulatory Commission, on the committee; both the Emergency Preparedness and the Response sides of NRC. We have PTE, the Preparedness Training and Exercise management of FEMA from our regional

offices, on the committee.

The RAC, the Regional Advisory Chair. We have representation from those individuals on the committee. As well as from the headquarters level, we have REP policy and REP training represented.

So the steering committee was established to bring together all of the experiences across the agency that had a stake in the REP program.

I mentioned the Federal Register notice, the 120-day comment period, all of the comments that came in. The steering committee took those comments from the Federal Register, as well as the resolutions that were passed by NEMA, as well as the comments or papers that had come in from the National REP Conference, and the Nuclear Energy Institute white paper, as well as various comments that came in from FEMA staff who had worked on the program, both in the past and currently.

And from all of those comments there seemed to be four principal concepts that emerged. And the committee crafted those into these four concept papers that you see before you. And these will be presented shortly.

Comments seem to fall into -- delegate into what might be termed a delegated state, exercise, streamlining, partnership and the REP program and the radiological aspects

of REP.

I also would stress, and I think our presenters later will stress to you that these are concepts. As part of this kind of strategic review, concepts are put together and then we take them out to the stakeholders to really get a true assessment of what needs to stay and what perhaps needs to be revised with the concepts. Or just what the stakeholder assessment is.

So, where do we go from here? The plan is that in January the Strategic Review will commence deliberation on the comments that we'll be receiving today, the comments that we'll receive at the midwest meetings, as well as at the east coast meeting. The comments that we received at the federal, state and tribal meeting, as well as the federal forum.

Then in January of this year, January of 97, the Strategic Review Steering Committee commenced deliberation on all of these concepts that had come in via all of the papers, as well as the Federal Register.

Also in January another initiative was undertaken by FEMA and that was establishing a regional advisory committee, assistance committee, that is the chair of each of the RAC committees in the FEMA regions, coming together to talk about consistency across regions, or just having a

forum to discuss the various activities.

In July of 97 the RACAC reviewed the concept papers. As I mentioned in September the government stakeholders meeting actually reviewed the concept papers. The federal stakeholders reviewed the concept papers in Dallas. And then today and Thursday and Friday these same concept papers will be reviewed with each of you at these public meetings.

We anticipate in January of 98 having a FEMA stakeholders meeting, that is our FEMA staff. They have not had an opportunity to comment as of this point on the concept papers as they stand. And pending funding, we do plan to bring all of the FEMA staff together to comment on the concept papers.

What's in the future? In February of 98, roughly two months from now, we anticipate having proposed recommendations go to the FEMA Director. Then after that, those recommendations would go into the Federal Register for a comment period. And our plan is that by May of 98 there would be some draft recommendations that would go to the FEMA Director for later implementation by FEMA Headquarters in the FEMA regions.

That is an outline of the process that the Strategic Review Steering Committee used in looking at the

REP program. And as I mentioned we are still looking at it because we're looking at you to provide additional comments to assist us in that look.

So, without further comment I'd like to turn to the next part of the program which is actually a review of the concept papers. And to take us through that review it's my pleasure to introduce to you Mr. Rick Auman. He is from Human Technologies, and will be acting as the Facilitator for today's activities. Rick.

MR. AUMAN: Thanks, Anne.

I'd like to quickly run through some ground rules for this morning and this afternoon, and just talk about how this session will go, to give you some idea of how we intend to run the meeting here.

First of all, each of the concept papers will be presented. They will give you a quick overview of their concept papers. The panelists will come up and give a quick overview of the papers.

We would ask that you hold any questions you have until after they've finished their presentation. And then there will be time for any clarifying questions that you may have at that time.

We would ask that you, if you have clarifying questions, please move to one of the microphones. There's

several reasons for that. One, of course, we're in a large auditorium here. It will be easier for the panelists to hear, as well as your colleagues to hear your questions. And, finally, we do have a recorder who is taking down all our comments and will be transcribing them. It will be easier for him to hear your questions if you do have those.

There will be a staff person at each microphone to assist you if the microphone is not turned on, or if there are any problems. And they'll indicate to you when it's your turn to ask that question. And the panelists will then respond.

If you have prepared responses and comments that you would like to make those will begin this afternoon at 2:00. We would ask, if you have comments to make at 2:00, if you would just line up at either of the two microphones. And, of course, given the small numbers that shouldn't be a problem finding space for you.

We established a ground rule of five minutes per person, not knowing how many people would show up. We would ask that you stick with that at least to begin with here. Although, of course, there will be plenty of time if any of you want to come back and continue comments we will be happy to listen to those as long as we're here, which will be till 4:30 this afternoon.

We'll take comments from one microphone at a time, alternating back and forth. As long as people want to continue to stay and talk about the program, we'll stay up until our ending time, which will be at 4:25 we'll take our last comments, and we'll end at 4:30, if there's anything else that people would like to pass on. Okay?

Again, as you go up to the microphone there will be somebody at each microphone. They'll brief you on the ground rules from the microphone, ask you to give your name and your affiliation, those kinds of things, for the recorder. And then we'll tell you when it's your turn to offer your statements. Okay?

Are there any questions before we begin?

Okay, the first paper we'll present this morning is the partnership paper in the REP program. That will be presented by Sharon Stoffel, Mary Lynn Miller and Stan MacIntosh will be coming up, as well. Yeah.

MS. MILLER: Good morning. My name is Mary Lynn Miller. I'm from FEMA Region 4 in Atlanta, Georgia.

Anne pretty much gave you a good overview of basically how we approached this as a committee, in terms of the concept papers, themselves. And I think the one concept that really needs to be brought out is in terms of the actual feedback that we got from the Federal Register

comments and those from the other organizations, that this Committee's role was to assimilate those into concepts that could be looked at; but, basically it was not the role of the Committee to actually create these ideas. So, these are basically a compilation of things that came from the Federal Register.

And we selected the partnership paper as the initial paper for the presentation because it is probably the most over-arching of all of the concept papers. The concept theme really touches all of the papers, themselves.

And the basic issue involved in this concept paper is should the role traditionally assumed by FEMA be modified from principally that of evaluator, of state and local ability to implement emergency response plans, to one more defined as a partnership with a broader relationship with the constituents.

And towards that end I think you probably all have copies of the paper or have seen it. But basically it's divided into four topic areas. I will present the first two sections, those being performance and policy. And my colleague, Sharon Stoffel, will present the second two sections, which are technical assistance and federal exercise participation.

And I must point out as you hear these, the

portions of the concept paper presented, that each of these sections should be treated rather independently. In other words, one section could be adopted without the other sections. So it could be selected between the different components of the concept paper. And that could be done very successfully.

Obviously the partnership would be enhanced with the full adoption of all the concepts, but again, they are rather independent in their context. Stanley, the next one, please. Stanley MacIntosh from Region 2, from New York, has kindly assisted us in our flipping here.

Beginning first with the performance section, many commenters proposed that federal, state and local government entities all have the same goal of protecting health and safety to the public. And so therefore many of the comments received focused on providing more flexibility to state and local governments, and reducing federal oversight in general.

Many commenters relayed that these recommendations appeared to be particularly applicable to REP in the environment that we're in right now, in that first, over the years the REP program has existed, the program has developed a very defined definition of the capabilities that a state and local and tribal government

must possess in order to adequately protect the public.

And at the same time those same years produced a sense of maturity and experience level within those entities to be able to carry out those plans to protect the public. And that the established record of performance justified a higher degree of control over the actual execution of the program and the environment that we exist in now.

A number of commenters recommended consistency with the guiding principles for federal efficiency outlined in the national performance review or NPR. I'm sure you're probably all basically familiar with that.

NPR recommends the development of performance partnerships between the entities of federal sector and state and local and tribal governments. And the focus of the partnerships is really seen as twofold.

First, it does recommend increased flexibility on how to actually accomplish goals that are set out and agreed to nationally. Coupled secondly with an increased sense of accountability in how those are done. So kind of, could be seen as a trade-off, a flexibility and accountability.

And the implementing fashion in how to move towards that, Anne mentioned in her introductory remarks, the Government Performance and Results Act, or GPRA, which is the guiding document for federal strategic planning.

What you'll see here in kind of a complicated little slide is the GPRA structure is really a tiered system that is not, I'm sure not foreign to anyone who's been involved in strategic planning. Basically at the global level, strategic goal setting. Goals which complement the overall mission of the program. And then from there the development of results-focused objectives. And generally performance measures or some way to gauge whether or not you've gotten there, are added at that particular level.

And then based on those goals and objectives that would be again more global or nationally set, the state and local governments would develop unique outcomes to achieve those. So the way to actually implement that would be the flexibility portion of that.

Now, the process, itself, was suggested to best take place in terms of the goal-setting portion of it, the upper level, in stakeholder or consensus fashion, so there is input into those objectives as that moves forward.

The challenge here, of course, is logistics. And how to accomplish that with adequate stakeholder input and still keeping the process manageable.

Just to give you -- here at the bottom of the slide you'll see PPA, off to the left, and then other avenues. The structure which comprises FEMA's agreement

with state governments in a non-disaster environment are performance partnership agreements, or PPAs.

A number of commenters recommended that REP be included in the state's performance partnership agreement to better facilitate the integration of REP into overall emergency planning.

Now the paper, and I guess I need to point this out very strongly, the paper does not recommend the shifting of funding through the performance partnership agreement. The paper recommends that the funding agreement that currently exists with utilities of state and local governments remain in place.

But PPAs are not directly tied to funding. They are strategic goal-setting documents. And so therefore have an emphasis on planning rather than actual resources. And actually the paper points out that the actual use of the PPA, itself, is not the critical path. But the strategic planning that underlies that as being the basic concept.

So the basic question here is, is a strategic planning approach valid for REP at this point. Or have the goals and objectives already been adequately established. So that would be the feedback we'd be looking for from you.

Next slide, Stanley. There's a little bit of a disconnect on letters here, so let me clarify that.

Originally there was a B section in this paper that was an evaluation component. That particular section, as we progressed in our assessment of the concept papers, appeared to heavily overlap the exercise streamlining. And we were finding that people were repeating their comments. And so rather than making people do that, we have moved that portion of this paper into the exercise streamlining paper. So there's a B section that's evaluation that has been removed.

So, actually in moving forward into the policy development, it will read as C in your concept paper. But we have not left anything out, we just shifted it over.

So the second section of this paper is policy development, and focuses on the need for greater stakeholder involvement in the development of ongoing policy. The paper discusses a number of methods for that including the use of workshops and conferences, among others.

And the success, I think Anne mentioned the Kansas City conference, the success in the development of the standard exercise report format or SERF was referenced by a number of commenters as a positive model for stakeholder input.

And the comments we have received to date in doing, as Anne mentioned, we've gone through a number of

these various stakeholder input meetings. The comments we've received to date on that process have had a relatively high approval level on that increased stakeholder involvement.

The pros, of course, of continuing, and in fact increasing stakeholder input to policy development include increased ownership, improved consistency, and a broader access to technical expertise that is possessed throughout the country.

It should be recognized that it does require a more in-depth analysis of stakeholder positions to insure the adequate policy is adopted, and therefore this collaborative means is more time intensive, but certainly the results had been found to be more useful.

Okay, we'll go on ahead and proceed with Sharon's two sections, and then open it up for any clarifying questions you may have.

MS. STOFFEL: Good morning, I'm Sharon Stoffel, and I work for FEMA in the Boston Regional Office, Region 1.

I'll be talking with you about technical assistance suggestions that were recorded in the concept paper.

And for starters, I'd like to clarify the use of the term technical assistance. Some of you may think of it

in purely technical radiological terms, but the context of the commenters from the Federal Register was much broader. It would include programmatic and planning assistance, as well as radiological assistance.

Comments were provided suggesting FEMA shift its emphasis from prescriptive evaluation to technical assistance to the states, tribal nations and local government. This would be intended to improve the partnership, as Mary Lynn was describing earlier.

FEMA would move from the role of an evaluator to more of a facilitator/educator. And presumably improved customer service would result.

Some examples of technical assistance that are contained in the paper and were provided by the commenters included plan improvement. And that would have FEMA in a role of providing more assistance with emergency preparedness plans for states, local governments and tribal nations.

A second kind of assistance could include training assistance. Again, FEMA assisting state, local and tribal nations, and participating in their training efforts.

Courtesy evaluations are the third means of providing technical assistance. This does happen in some evaluation contexts throughout the country, where it's not a

graded evaluation but rather a courtesy evaluation information exchange during rehearsals for exercises. And it was suggested that we continue and expand those kinds of efforts.

A fourth kind of assistance would have to do with radiological monitoring. And it was suggested that FEMA work with other federal agencies to identify key radiological monitoring and assessment capabilities, determine where more effort is needed, and work with those entities to make the needed improvements.

A fifth area could include internet involvement, and more specifically, creating a website for technical assistance for the REP program.

Another means of providing technical assistance could be emphasizing corrective actions versus an ultimate grade. Emphasizing correcting the issues during exercise play or drill play with less concern for the ultimate result, which is primary part of the way we do business now.

It's felt very strongly that improved learning would happen, it would be a less threatening environment, and relationships would improve within the partnership.

Another means for providing technical assistance could be for FEMA to take a more active role with the emergency alert system.

A final means of assistance could include FEMA assisting with special needs data, and that would mean FEMA getting involved in obtaining the data and working with the privacy issues surrounding that particular type of data.

Other areas that are mentioned in the paper could include such things as technical assistance conferences, more site visits, and things of that nature. Much more hands-on.

The final category for the concept paper had to do with federal exercise participation. It was felt that if the federal government were a more active participant in exercises that people on all levels would have a better knowledge of federal plans and federal resources that would be available in the scenario that was being tested.

We could better test the relationship between the federal radiological emergency response plan and the federal response plan. And an issue that would need to be examined that was certainly raised in the paper has to do with the requirement for greater commitment of resources in order for the federal government to play a larger role in REP exercising.

And those are the major categories for the partnership paper. Thank you.

MR. AUMAN: We have time allotted now if anyone

has questions. If you'd like to move to one of the microphones we'll take those clarifying questions now.

(Pause.)

MR. AUMAN: If not, I'll thank Sharon and Mary Lynn.

MS. MILLER: Thank you.

MR. AUMAN: The next concept paper will be presented on the radiological aspects of REP. The presenters for this paper are Falk Kantor, Tom Essig, Bill McNutt and Marcus Wynche.

MR. KANTOR: Good morning, I'm Paul Kantor. I'm a member of the Strategic Review Steering Committee, and I'm with the Nuclear Regulatory Commission in our Headquarters Emergency Preparedness Group.

And my cohorts here, Bill McNutt of FEMA, and Tom Essig of the NRC. Please feel free to join in with any comments.

This paper here, as you see, is the focus on the radiological aspects of REP in relation to the all hazards aspects of REP. If you examine FEMA's mission statement, one of the goals is stated as to establish in concern with FEMA's partners a national emergency management system that is comprehensive, risk-based, and all hazards in approach.

So, FEMA, as an agency, has been moving in the

direction of all hazards emergency planning. And we received several comments from the public and other organizations stressing or stating that REP should also be included in the all hazards approach to emergency planning.

During the course of the review of the issue of inclusion of REP in the all hazards generic approach to EP, a related issue was identified by the steering committee and also in some of the comments concerning whether the efforts of state and local governments, as well as FEMA, should be focused on those activities in REP unique to radiological emergencies and less on the non-radiological aspects, the generic aspects common to all emergencies.

So from that we developed the issue, the concept paper issue of would the REP program be more effective and streamlined by focusing more on radiological activities and less on non-radiological activities. So that's the issue of this paper.

And in our review we first took a look at the planning standards and evaluation criteria of new reg 0654, the objectives and in demonstration criteria in REP 14 and REP 15, which could be considered specifically radiological or all hazards, generic.

We also examined the regulatory basis for EP to determine if there were any impediments to moving REP into

all hazards. And we took a very brief overview look at the extent of changes which might be required in FEMA regulations and REP program guidance if we did implement this sort of program.

Under the current program all EP standards must be met, and the resulting REP program must continue to provide reasonable assurance. And we would certainly need to maintain that no matter which direction we went with any of these concept papers. But how this would be accomplished may differ from what is already in place.

In looking at all hazards, we did examine some of the plans from various states that have moved in that direction. There's a different spectrum of approaches on how different states and localities have attempted to include REP in their all hazards approach to planning.

FEMA, itself, has issued a guide, state and local guide 101, a guidance for all hazards emergency planning, which provides some recommendations and directions for developing all hazards plans. And the -- referred to as emergency operations plan, which consists of a basic plan functional annexes of the core functions similar to all emergency response. and then hazard-specific appendices which would include nuclear power plant accidents.

Next slide. It became apparent to us that the

plan format was not really relative to the issue. There are many different ways to format a plan, but if that's all you accomplish was a reformatting of a plan, the from a strategic review not too much was gained.

And then regardless of the format response personnel must be knowledgeable and able to demonstrate the plan's effectiveness in exercises.

As part of our review we reviewed the 0654 planning standards in the context of radiological or generic functions. And we quickly determined that that did not lend itself very well to trying to differentiate between radiological and non-radiological aspects because the standards pretty much encompassed both aspects.

We determined it was more useful to look at the REP 14 exercise objectives, and within the objectives, to the demonstration criteria and points of reference under each of the objectives, as shown in REP 14 and 15.

We took, like I say, a first cut at developing which of the REP 14 objectives could be considered non-radiological and we came up with this short list of about four as an illustration, example. There aren't that many that really fall out as pure, non-radiological objectives.

A much larger category, you find that the objectives have both all hazards generic functions and REP

functions within them. And here's a list that we came up. Again, nothing magic or permanent about this list. Just an illustrative example of some of the objectives. If you're in the program you're very well familiar with them. That includes both aspects of RAD versus nonRAD.

And then we also identified another list of objectives that clearly appear to be radiological in approach. And this is a list of these objectives here. And you can see the majority of the objectives, or at least about 50 percent, have pure radiological aspects to them.

State and local governments, you know, have been demonstrating the ability to meet these objectives. And the question arises, is it practical to separate the objectives, the demonstration criteria, points of review that are considered radiological from the non-radiological. And if so, which ones. So that's the first question that arises.

And, for example, you can look at the objective of communications. It appears to be a generic activity. Every response, every emergency involves communications. But if you look at it closer some of the demonstration criteria do appear to have specific radiological functions.

For example, communications between plant operators and the EOC. From the EOC to field teams. That sort of thing are quite clearly radiological type

communication activities. And then the question is can these functions be separated without affecting execution of the exercise.

Another example we looked at was staffing. Objective 30, as far as a continuous 24-hour staffing. Again, that appears to be a generic preparedness response function, one that's maybe demonstrated in other non-radiological emergencies. But if you look close you find an aspect to it where the outgoing staff is expected to brief the oncoming staff as to the radiological aspects of the emergency. So, again, the question is can this function be separated without affecting execution of the exercise.

And we talk about the exercise, the concept of the integrated exercise. It's defined in the NRC and FEMA regulations. But the integrated exercise is just that, it does require involvement, participation of the major organizations that are part of the emergency response organization, as identified in the plans.

Includes the testing of the major observable portions of the on-site and off-site emergency plans, and mobilization of state and local licensing personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario.

And also, of course, the regulations require a

periodic exercise which is now biennial, to be conducted.

And in order to conduct a truly integrated exercise you really do need to include some of these generic activities, such as communications and so forth. And these generic, all hazard concepts really form the glue, you might say, for an exercise. So it's difficult to separate out the radiological versus non-radiological aspects from a truly fully integrated exercise.

Notwithstanding that we took a look at a possible alternative approach, and we show a schematic here of a possible approach to reaching a finding of reasonable assurance somewhat different than we do it today.

And there are a couple discrete -- a couple different areas that can be broken up. One is we call discrete drills; another one is a readiness appraisals, credit for exercises and expanded annual letter of certification. With, perhaps, a full participation exercise, which could be less frequent than it is now.

Let's take a closer look at each one of these and see what we're referring to. Discrete drills for radiological activities. There are some that immediately come to mind. Field monitoring team demonstrations. Emergency worker demonstrating capability of knowledge and using dose symmetry. Exposure control, DCON, use of KI.

Direction and control responsibilities. Showing understanding of technical information, radiological information. Protective action decision making. Medical response to a radiological emergency. And health physics drills are clearly radiological drills that could be done outside of the exercise in stand-alone, discrete fashion.

And you'll notice some overlap with this paper and a paper you'll be hearing about a little bit later on, the exercise streamlining paper.

Another part of this alternative approach is these, what we call readiness appraisals in conjunction with these drills. These are walk-throughs with response organization staff; perhaps an increase in inspections or examinations might be more appropriate to call them. Where FEMA staff would go out and interview and review capabilities of off-site organizations. Form inventory and roster reviews. Do audits of resources, and verify the current information listed in letters of agreement.

Another possible approach is looking, as part of this approach is looking at all hazard exercises; evaluating some of the aspects of all hazard exercises, apart from the REP exercise, or some of these activities that are non-radiological in function.

Another part of the approach is expanding credit

for real emergencies, or non-radiological response activities. Some of that is going on today, and that perhaps could be expanded.

And another part is assessment of the plans and preparedness in an expanded annual letter of certification.

So, with these different possible approaches it could lead to a way or approach to focus on the RAD aspects and less on the nonRAD aspects.

But that brings up certain issues to ponder here. And the first is can FEMA make its adequacy findings based on drills and other preparedness activities, combined with less frequent, full participation exercises. Under the present regulatory scheme, FEMA is required to evaluate and provide its findings to the NRC, it's findings of reasonable assurance that the plans are adequate and can be implemented.

Can you focus on the radiological aspects of REP without affecting the exercise process? And how and with what frequency does one make judgments on reasonable assurance?

Another question is would more focus on radiological functions and less focus on generic functions fragment a coordinated response process. And, finally, the bottom line overall question, does emphasis on the RAD

aspects of REP and less emphasis on the generic aspects of REP merit further consideration by the Committee.

Any additional comments, Bill, Tom?

MR. McNUTT: I'd just like to emphasize that the essence of this concept is the alternative approach, which proposes that we use these discrete radiological drills, the readiness assessments, the use of generic exercise activity and expanding credit for responding to real emergencies, and what we call the annual letter of certification where the state provides FEMA with a checklist of what they've accomplished during the year, per FEMA guidance.

And we take all these activities and combine them and do these on an annual basis. And then what have we gained? Well, if we take a look at the biennial exercise and we relax the frequency to perhaps once every three years, and once every four years, I think there is some advantages in reducing the intensity of evaluation that we currently have. Although the discrete drill would require an evaluator, certainly it wouldn't be to the extent that we currently have at our integrated exercises.

But what we need to, at some point, once every three or four years we would still need to have a full participation, integrated exercise.

MR. KANTOR: Any clarifying questions on the

concept, itself? We would entertain those now, or if you want, I guess, later to make statements. But if there's anything in the concept that we can clarify now we'd be glad to do that.

(Pause.)

MR. AUMAN: I guess not. Thank you.

I think -- we're a little ahead of schedule, I think we'll just go on with the next concept paper, which will be on Exercise Streamlining. And that will be presented by Bob Bissell, Janet Lamb and Woody Curtis.

MS. LAMB: Good morning, everyone. My name is Janet Lamb. I'm the RAC Chairperson from FEMA Region 3 in Philadelphia. And with me is Woody Curtis, the RAC Chairperson from Region 5 in Chicago. And Bob Bissell, the RAC Chair for Region 7 in Kansas City.

When we initially began reviewing all the comments received from you and others it was pretty evident that a lot of the comments centered around exercises and the exercise evaluation process. Our paper discusses this, but it also identifies several other areas and other methods to confirm the existence of reasonable assurance that the appropriate protective actions can be taken to protect the health and safety of the public within the area of the nuclear power plants.

Our purpose is to identify your comments into several different approaches that could be used in a combination to provide a reasonable assurance finding that health and safety will be protected.

The additional methods include concentration on results-oriented evaluations. Concentration on objectives that are radiological in nature. Expanded use of the annual letter of certification. And verification of the annual letters of certification through inspections or spot inspections throughout the year.

Development of a more flexible credit policy for participation in other natural hazard exercises, or in some cases in real events that the community has responded to. Bob will address these and other approaches that we have lumped together from all of your comments received in the Federal Register, the NEMA Conference, the white paper from NEI, and FEMA staff comments.

We've grouped them into eight areas and we would like to point out the fact that these could be used in a combination to provide the reasonable assurance that we need to do to maintain the program in the regulatory capacity.

In addition to the exercise streamlining paper, the RAC Chairpersons from across the country have developed a sample that is attached to the exercise streamlining, and

we would like to say that this is one approach that could be used to streamline the exercise evaluation tool used in the event of a full participation exercise.

Right now Bob is going to discuss each of the eight areas that we address in our paper as possible approaches to exercise streamlining.

MR. BISSELL: Thanks, Janet. As she said earlier, we've consolidated all these comments into eight different approaches. And some of these concepts, some of these ideas, some of these recommendations you've heard in previous papers, but what we've tried to do is apply these ideas and these concepts to the exercise process, itself.

I'd like to begin with the first approach which is the results-oriented exercise evaluation process. Currently the exercise evaluation methodology utilizes 33 objectives. This was introduced in September of 1991.

They contain a sizeable number of points of review that must be successfully demonstrated to meet the requirements of that objective. It's a very structured process and leaves very little latitude for the evaluator.

What has been proposed, which we have called the results-oriented evaluation process, is a significant change to that process. It does contain a reduced number of objectives. The objectives are much more broad, and the

checklist format no longer exists.

This process would allow the players to complete an activity without following a specific checklist. For example, if an emergency response decision was made in an emergency operation center to perform a certain response function, and that function did not necessarily follow the plan as far as resources or responsibilities or authority, and as long as that emergency response function was successfully completed, there would not be an exercise issue.

This would give the players much more latitude to reach a desired outcome. Evaluators would concentrate on the outcome of the exercise, and not the means to complete that task.

The second approach which you heard quite some detail earlier was to increase the focus on the radiological aspects of the REP program. The other non-radiological objectives could be accomplished by other means. And some of the recommendations provided to us were to do that, perform those functions in real events.

As you all know there are a lot of these objectives apply to any type of emergency such as fires, chemical spills, and other natural disasters. So those objectives could be demonstrated during those actual events,

and credit could be provided for those.

Another area that could be utilized to obtain credit for those non-radiological objectives would be in other nonREP exercises. This could be hazardous materials exercises, chemical stockpile emergency preparedness exercises, and other natural disaster exercises conducted through the state and local level.

The other recommendation was that some of these objectives, these non-radiological objectives, could receive credit or demonstrated through FEMA staff assistance visits. And you've heard a little bit about that earlier, and we'll talk about that a little more in another slide.

The third approach was the consolidation of like objectives. We received quite a few comments that some of the objectives are very similar, and we could combine those objectives and actually reduce the number of objectives to be demonstrated.

Some of those would be combining, for example, objective 1, mobilization and objective 30, 24-hour staffing. Combining objective 2, facilities with objective 3, direction and control and communications. And combining objective 5, exposure control with objective 14, potassium iodide, just to mention a few.

This would eliminate redundancy in the points of

review between objectives.

Okay, the other approach was to update REP policy and guidance. FEMA has not done a very good job in updating the evaluation methodology guidance with the changes in the program. Most recently we've had some updates and changes to the emergency broadcast system and EPA has provided an update to their manual protective action guides.

The concern here was that FEMA should develop a method to quickly update these manuals and make it user friendly where these changes could be easily updated with page inserts.

Frequency of objective demonstration. There was a lot of concern here that we spend too much time on the emergency phase of these exercises, and that we should allow more time or flexibility for the state and locals to perform more ingestion and recovery and reentry objectives.

Some of the recommendations made to us was to, within that six-year cycle, allow the state the option to start off with an ingestion exercise and eliminate the emergency portion of that process.

One of the other comments made is that we have too much demonstration of some objectives, the overriding theme was that we should be evaluating medical drills on a two-year cycle instead of a one-year cycle.

There was some statements that we should have more frequent demonstration of some objectives. It was a consensus, I believe, that the state and locals would like to see more opportunities to demonstrate those ingestion and recovery and reentry objectives.

Then the other item that we've heard about earlier was to involve the federal players more. They would like to see the federal radiological emergency response plan tested in those ingestion exercises.

Okay, the other approach -- one of the other approaches was out-of-sequence demonstrations. Currently some state and local demonstrations are performed outside the exercise sequence. However, there appears to be an interest to expand on those demonstrations. Some of the suggestions we received were to include nursing homes, correctional centers, radiological laboratories, ingestion field teams, traffic and access control functions, dose calculations and others in these out-of-sequence demonstrations.

It was also suggested that the plume and ingestion exercises be done out of sequence. Specifically perform the plume or emergency phase exercise in one year, and possibly come back in the off-year and do the ingestion portion of that exercise.

Some of the other comments we received which we included in this approach was some concerns about the feedback provided by the evaluators. We had quite a few comments indicating that FEMA does not do a very good job with providing feedback to the evaluators -- or excuse me, to the players following the exercise. They would like to see more time spent immediately following the drill or the exercise with the players while they're still there and while everything is fresh on their minds to discuss the good things and the questionable things that occurred during the exercise. They feel that not enough time is spent on this process.

Another item, kind of innovative item suggested, was that FEMA be allowed to, at certain stages of the exercise, if it's observed that an evaluation is going poorly, that that evaluator stop that function and provide some on-the-spot training for that player, and then redemonstrate that objective right there while it's fresh on their mind.

The issue would be documented as an area requiring corrective action in the exercise report, but it would include an appropriate statement indicating that the issue was corrected and there would not be a requirement to perform that objective again during the next exercise.

The evaluators would provide immediate feedback to the exercise participants. And which they all felt, and we feel, too, would be positive feedback for the player. This would certainly result in a much more positive and meaningful experience with the player and the evaluator.

Another approach was exercise credit. And, again, we've heard a little bit about this in the previous papers. Currently FEMA only allows credit for two objectives, off hours and unannounced exercises and drills. I think there has been some flexibility in some of the regions, though, with these two, with these items.

It's been proposed that that be greatly expanded to include numerous objectives such as mobilization facilities, direction and control, communications, schools, special populations, just to mention a few.

The suggestion was made that these objectives could be verified through either an actual emergency or other all hazard exercises. We've talked about that a little bit earlier before.

One of the concerns here, though, that was raised was that if this was to occur and we did decide to expand those objectives for credit, that FEMA-developed standard implementation guidelines that clearly documented the objectives that could qualify, and the required

documentation for those.

The last item, we kind of summarized all of these approaches into what we call the alternative evaluation approaches. And basically the commenters would like to see these items demonstrated in lieu of actually performing an evaluation.

Staff assistance visits. We discussed this a little bit earlier. It was discussed in more detail in another paper. FEMA would provide staff to perform visits to the state and locals to provide feedback on training, possibly some informal evaluations of out-of-sequence drills, or other exercises, non-evaluated exercises.

We talked about out-of-sequence evaluations again. They would like to see that greatly expanded to reduce the amount of time spent on full-scale exercises. Same with credit for actual events.

The annual letters of certification, it was proposed that that be expanded to include other items that are normally evaluated during exercises. Such things as -- equipment, maintenance and calibration; personal dose symmetry operability and maintenance; potassium iodide requirements; communication drills.

The last item, self-assessment. There are quite a few organizations, I believe on the east coast, that

participate that are below the county level and are required to demonstrate and participate in exercises. It's been proposed that those organizations below the county level perform self-assessments and provide the results of those assessments in the annual letter of certification.

That concludes our presentation and we'll entertain any questions for clarification.

Thank you.

MR. AUMAN: Okay, any questions?

All right, we're going to press on on the agenda then and finish up with our fourth concept paper on Delegated State. That will be presented by Steve Borth, Tammy Doherty and Rose Mary Hogan.

MS. DOHERTY: Good morning, I'm Tammy Doherty and I'm from the FEMA Regional Office in Seattle, Washington. And we have Steve Borth and Rose Mary Hogan. Steve is from FEMA at EMI; Rose Mary is from the NRC, in Headquarters, I guess.

As all the other presenters have said, these concept papers were developed using the comments from the Federal Register, and any other comments that we've gotten.

The delegated state concept, we tried to be a little creative. It's a fundamental change from the current rep program and it's somewhat far out, but we actually used

the comments that we got to put it together. So, it's definitely a different approach.

Under the concept FEMA would still provide reasonable assurance findings to NRC, however the method of collecting that information would be quite different than we do it now. If the concept is approved the implementation details would have to be worked out.

As the concept is written now, the delegation would be for each site. We would have 350 plan approval required before a site could become a delegated state or a delegated site. The group used the 350 plan approval, assuming that that would be sort of a baseline that reasonable assurance exists, and I guess there are 12 sites now that do not have the 350 plan approval. So, it could be a problem for those sites.

The states would submit a detailed annual letter of certification which would be the non-exercise vehicle that would document compliance. And it would be -- under the concept paper it would be an expanded annual letter of certification. And then FEMA would continue to provide limited oversight.

The program would be voluntary. The governor or his or her designee would apply. And then the state would have to meet certain criteria outlined by FEMA. Some of the

ideas that we had for that criteria would be that they would continue to -- that the states would continue to conduct and evaluate exercises. And that a standard expanded annual letter of certification that would contain some enhanced requirements would still need to be submitted each year.

The annual letter of certification would be very important and FEMA would rate, would take a look at the annual letter of certification and then rate each function. And the ratings would be, as proposed in the paper, either acceptable, acceptable with recommendations for improvement, or unacceptable. And then based on those ratings FEMA would make an overall finding about reasonable assurance.

The findings could be described in three ways, either a reasonable assurance exists, reasonable assurance exists but the program needs improvement, or reasonable assurance doesn't exist. And if that happened then the state would have to develop some improvement strategies. And another possibility would be that FEMA would evaluate the next exercise. If the shortfalls weren't corrected then the site could lose the delegated state status.

The paper talks about really the major function that's being delegated would be the evaluation function, although the state would have control over all the other things, too, but the major function would be the evaluation

function. And as the concept paper is written, the state would use the FEMA-endorsed exercise methodology, and would still have to develop issues and corrective actions after exercises.

The state could use state and local staff as long as they were trained to evaluate exercises. And if the state wanted, then you know, you could still invite FEMA evaluators in, as long as they were available.

The last paper, actually I think a couple of papers have talked about the credit policy. Based on the comments that we've gotten it's pretty clear that we need a more enhanced credit policy and I think that that is definitely something that will come out of this process.

But one of the provisions in the delegated state concept could be the states could apply for the credit policy in their exercises, and then they could include that information in their annual letter of certification. And if FEMA identified any problems with it, then FEMA could go in and require some sort of correction. But the delegated states would be able to use the credit policy, also.

FEMA may opt to verify portions of the state's program periodically. Some of the areas we might want to look at would be the training plan for responders, drill or exercise evaluation plans, plan and procedure maintenance

program, the roster of key staff. And then periodic visits to assess facilities, equipment and training.

And part of the concept could be that states with good performance would have fewer verification visits. And then vice versa for states that don't have such great performance.

If this concept makes it through the process to the final recommendations, we would really need to look at the financial, how it would be funded. And that's not something that we've done because it was such a different concept that we didn't want to take a whole lot of time to do that now until we found out if it was really a viable concept.

So, some of the things we would need to look at is would the utilities continue to fund FEMA. Would some of that money be passed to the states. Would the utilities go ahead and just fund the states directly. And, you know, any other ideas that we can come up with. But the funding is definitely something we need to take a look at, and we have not.

Since this is such a fundamental change from the current program we would want to try it on a few pilot states before we just implemented it. And that way any problems that developed we would be able to work out before

it was fully implemented.

Sites without the delegated status would continue to be evaluated by FEMA, and would be able to take advantage of any of the improvements we made in the current rep program. But FEMA would still be as involved as they are now.

We tried to list some of the advantages and disadvantages. I'm sure we'll hear more disadvantages than we've got listed, but this is what we've come up with as far as advantages.

States would have much greater flexibility in conducting their REP programs. You would still have certain requirements, but the methods and procedures wouldn't be prescribed by FEMA.

The 350 plan approval process takes on more importance so that the 12 sites that currently don't have it may want to go ahead and get it. And it does provide a baseline for granting the delegated state status.

The annual letter of certification takes on more importance. It would be the primary document that FEMA would use to assess reasonable assurance, other than the exercise results.

And it's possible that some streamlining could result because it may reduce some of the FEMA resources that

are used now. As you've seen in some of the other papers we talk about having more technical assistance. So maybe some of the people now that are doing more evaluation type stuff could be used for some of the technical assistance.

Disadvantages. States would be evaluating themselves, and that could be perceived as not very effective. There could be -- the public might have a problem with that. You know, we're just not sure at this point.

This status would require more state resources. And if you couldn't make arrangements with other states, that could be a problem.

And FEMA would be involved in administering a dual system, because we'd have some states that had delegated status and others that did not. So we would still have to keep some group of FEMA staff to deal with the non-delegated states.

So that's kind of the concept in a nutshell. And if you've got any clarifying questions, I'd be glad to answer them.

MR. AUMAN: Any questions? Thank you.

We're going to adjust our schedule a little bit, given some comments that came up, and given that we're ahead of schedule based on the agenda that you have.

We're going to take a short break, about 15 minutes. Outside in the lobby there is a small snack bar there that does have coffee and sandwiches available.

We'll come back in about 15 minutes and I'll ask one member from each of our panelists to come up and we'll begin taking prepared comments.

I've got five of; we'll come back about ten after. So, at 11:10 we'll begin taking prepared comments and we'll continue on as long as we need to. And we'll make that decision if we have to break at that time.

Okay, so we'll take about 15 minutes and then we'll take your comments after that. Thank you.

(Brief recess.)

MR. AUMAN: We're still trying to track down our fourth panelist, but we're going to go ahead and start anyhow. We'll take comments at this time from anyone who would like to.

Again, we have plenty of time so I think the five-minute rule is really a moot point. So, if any of you would like to come down to the microphone we'll be happy to take your comments now.

Over here. If you would start off, please, with your name and your affiliation for our reporter, and then you can go from there. Thank you.

MR. WAAGE: Yes, my name is Edward Waage, last name W-a-a-g-e. I'm a Senior Emergency Planner with Diablo Canyon Power Plant, Pacific Gas and Electric Company.

We welcome the opportunity to comment on this review of the FEMA program. The REP program has matured considerably since its inception following the accident at TMI. Local and state governments have consistently demonstrated that they can and will protect the public in an accident.

There was a large body of detailed guidance memoranda, REP guidance, and evaluation methods which were developed largely in response to the results or to the needs of NRC licensing hearings. These detailed guidance may have been useful in the legal arena, but they are of limited value in evaluating the capability to respond to an accident.

We recommend that the detailed guidance, especially on exercise evaluation, be eliminated; and instead, use performance-based evaluation. Rather than asking did the responders follow every step of the procedure, we should ask were the decisions made and actions taken appropriate to protect the public.

Studies of successful responses by communities in emergencies which required evacuation indicated that there

are a few essential elements which led to that success. They are written plans for procedures, a regular exercise of those plans and procedures, and emergency response personnel who are trained in their duties.

The successful responses occurred in the absence of any federal oversight. I'm not suggesting that federal oversight be eliminated, but the nature of that oversight needs an extensive overhaul.

FEMA has added a layer of detailed criteria to evaluate local and state performance, which do little to improve overall preparedness. The detailed checklist in REP 14 and 15 should be replaced by broad objectives based upon the criteria of new reg 654.

And evaluation of those objectives should consist of a determination of whether the state and local governments made appropriate decisions, and whether the public was adequately informed of those decisions. The outcome of the response is the most important part.

The current process encourages evaluators to look at every step of the procedure, and if it's not followed step-by-step the evaluator writes up a finding. This process discourages management of the emergency, and instead rewards simple following of checklists. The real world requires that emergency responders exercise their judgment

to take the necessary actions. But such emergency management may be penalized by the evaluation process.

Another area of concern are the qualifications of FEMA evaluators. The exercise evaluation team is usually made up of large numbers of contractors from government laboratories. While they may be talented individuals, they rarely have an emergency preparedness background.

The best evaluators are those who have been there and done that. They are the local and state responders who have written plans and procedures, exercised those plans and procedures, and trained their agencies to carry them out.

We would encourage FEMA to use the talents and experiences that these local and state agency personnel could bring to the evaluation of exercises.

Further, the large numbers of evaluators are unnecessary. For example, the Nuclear Regulatory Commission does an admirable job in evaluating utilities response with a team usually consisting of four. And their evaluation is more performance-based than FEMA's.

If the emphasis is placed upon the outcome of the response, FEMA could perform its evaluation with a smaller, more effective evaluation team.

There is one area where the federal government can be of considerable help, and that is the direct

technical assistance. The Department of Energy has been making good progress in assisting states in recovery phases of an emergency. And FEMA should continue to put more resources into improving its own response efforts and those of other federal agencies. There are many opportunities in this area.

While my comments are fairly broad, I guess I do have specific concerns about some of the proposals. I guess the overriding one is the current situation where we have detailed criteria, lots of paperwork involved in determining effectiveness. I would caution that as you go forward and develop new criteria and so forth, objective-based, if you will, that the process not be cumbersome; that you look at the end user and the effectiveness of the program when you come up with your final documents, if you will. The devil's always in the details.

And when the final product is out, that it be easy to implement with as little burden as necessary for the local and state responders that can demonstrate that they are prepared.

Thank you. I can give you a copy of my prepared statement.

MR. AUMAN: Thank you.

MR. BROWN: Good morning, George Brown, San Luis

Obispo County Office of Emergency Services.

Listening to the concept papers brought out some ideas, and I'm going to tie my ideas to specific papers.

On the partnership concept paper, in talking about technical assistance, I think one thing that the FEMA regions could do would be to act as a broker, letting -- say one agency or one jurisdiction does a particularly good job of dealing with the special needs population list, let other people know who are struggling with that issue who's doing a good job of it.

And that would -- let's not reinvent the wheel. There are people out there with an emergency management community that have expertise. And if the regions really wanted to help provide it, FEMA's not the only source of the knowledge.

On the radiological focus concept paper, again I would emphasize the exercise credit for real world events. The functions of emergency management are not unique to REP. Alert and notification and managing evaluations and traffic management, all of those things go on on a day-to-day basis in our jurisdictions.

And I think we could reduce the burden on FEMA in terms of the number of evaluators they bring into our communities, the paperwork burden, the financial burden, if

effective exercise credit was given for real world emergencies.

Along the same line there was talk about whether we should have all the objectives in the exercise or only the REP objectives. And I think maybe what we could do, again reducing the burden on FEMA, all the objectives could be included, but the only objectives that are evaluated would be the REP objectives.

I realize it's important to have the other objectives included for a smooth flowing exercise, but that doesn't mean that FEMA needs to be evaluating things that are done on a day-to-day basis.

And with regard to the delegated state concept paper, I would encourage FEMA to look at this very creatively. There are other examples out there in the federal government. The FED-OSHA/state-OSHA program is a classic example of a delegated program that's been very successful. States that had effective occupational safety programs prior to the concept of Fed-OSHA were permitted to continue those.

Another example is the federal/state forestry fire prevention programs where there's a tradeoff in jurisdiction, where the federal government will allow the states to provide the service where it's much more cost

effective.

Thank you.

MR. AUMAN: Thank you.

MS. HANDLEY: Good morning, my name is Pamela Handley; last name H-a-n-d-l-e-y. I work for Southern California Edison at the San Onofre Nuclear Generating Station. I'm the Supervisor of off-site emergency planning.

I have a few comments regarding the presentations this morning. First I'd like to mention that I appreciate the opportunity to participate as a stakeholder in this process.

Generally what we'd like to see is an emphasis and a focus on the exercise streamlining activity, place a priority on this activity, develop an action plan and a schedule for implementation.

We'd like to see a delay or deferral of the delegated state initiative until the higher priority strategic review activities have been implemented.

Comments on some of the concepts, monitoring of reasonable assurance. It has been established through a number of regulatory required licensing proceedings that the current level of exercise evaluation is sufficient to initially establish reasonable assurance program adequacy for any given site.

FEMA should continue to maintain the current level of evaluation for a site initial licensing exercise. Once this is conducted and an operating license is issued, the role for maintaining assurance of public health and safety should shift to one that monitors the adequacy of the program, rather than repeatedly reconfirming the initial finding during each subsequent exercise evaluation.

We believe the exercise evaluation process should be consolidated. The biennial exercises should be -- the evaluation of the biennial exercises should be limited to evaluating previously identified concerns.

We ask you to consider an efficient approach to the determining of reasonable assurance. And one of the things that's important to the utility is not using unrealistic exercise scenarios. Reducing the requirement for the medical drill frequency to a biennial requirement.

We recognize that we are indeed in partnership with the participants in the REP program, and one of the final things that we'd like to see is providing credit for real events. And using self evaluation.

The initiatives that you've discussed here today offer a window of opportunity for revolutionary change. We encourage you to accept the challenge and the leadership role and streamline the rep process and the program

operations.

Thank you.

MR. AUMAN: Thank you very much. Any other comments?

No? If not, I'll turn it back over to Anne Martin.

MS. MARTIN: Thank you, Rick. And I'd just like to thank each of our participants again for coming out today. And I also would like to take this opportunity to thank our Region 9 who just rendered us exemplary support and made this program happen today.

Sally Zrolkowski, probably most of you know Sally, who is the Preparedness Training and Exercises Division Director here in San Francisco. On her staff, Richard Echavarirra, and also today, Jeremiah Hall, David Fowler and Eliza Chan were supporting us with media inquiries. So, thank you to our Region 9 colleagues here.

And I'd like to remind you that if there are any comments that you have that come to mind after this meeting, after you have had an opportunity to cogitate what you heard about the concept papers, that you have an opportunity to submit written comments to the address -- this is also on your agenda, so you have a piece of paper to take away with the address -- to Nancy Goldstein on or before January 1st.

That is a date that was established because the Strategic Review Steering Committee will begin its deliberations in January to develop the preliminary recommendations. So any comments that come in before then, of course, would be folded into those initial recommendations.

And in particular I would like to thank Pamela Handley, Ed Waage and George Brown for your comments. And particularly for the challenge, to accept the challenge and to exercise the leadership role. That's certainly what we want to do here in redefining the REP program, but we can only do that with your help and your assistance, and in tandem with you.

So, again, we appreciate your coming out today and taking part in the process.

And that concludes our meeting.

(Whereupon, at 11:30 a.m., the meeting was concluded.)

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REPORTER'S CERTIFICATE

DOCKET NO.:

CASE TITLE: RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM STRATEGIC REVIEW

HEARING DATE: December 2, 1997

LOCATION: San Francisco, California

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the United States Federal Emergency Management Agency.

Date: December 2, 1997

George Palmer
Official Reporter
Heritage Reporting Corporation
1220 L Street, N. W.
Washington, D. C. 20005

WELCOME AND OVERVIEW

MR. MILLER: Good morning. I'm John Miller, Regional Director of FEMA, Region 7 in Kansas City. I'm here to welcome you this morning to the At-Large Stakeholders Meeting on behalf of Director Witt and Kay Gaus (phonetic), who is the Associate Director of Preparedness, Training, and Exercises. I don't want to leave anybody out here. On behalf of my colleagues in Region 6, Buddie Young, who was not able to be here, and Michelle Berquette (phonetic), in Chicago, who was not able to be here, I want to welcome you to St. Louis, to the Central Territory, to Region 7 actually, but if you go, -- which way is east? If you go east, how far? Ten miles, you'll be in Region 5. So, we welcome you to the Central Territory.

I was looking at the sign-in sheets and I noticed that we have folks here from Michigan. And I was reading down through and I saw the State of A-R-K-A-N-S-A-S. I went to school in Kansas, and in Kansas they call it Ar-Kansas. And in Arkansas they call it Arkansas. So, whether you're from Arkansas or Ar-Kansas, we've got some folks from that state, too.

I wanted to talk to you just a moment this morning. I told a story in Kansas City. This summer I was at a class reunion of my wife, -- and we won't talk about how many years ago that was, and I ran into a woman there, when I told her what I did, she was, -- she lived within the EPZ of one of our nuclear power plants. And out of the blue she basically said to me,

"Whatever you're doing, please keep doing it, because those of us that live next to those power plants rely on you to make sure that if, in the outside chance something happens, we can be safe and our families can be safe". So, as we look to the meeting today, as we are part of this Stakeholders Meeting, as you make your comments, as you listen to the presentations, I have talked to

Matthew, -- tell me your last name, Matthew?

MR. ALGEO: Algeo.

MR. MILLER: Algeo, on the NPR a couple of days ago. And one of the things that I stressed to him is that even though we look at changing some of the rules; at looking at streamlining, that the health and safety of the people that live around the nuclear power plants are our biggest concern and we do not want to lose sight of that goal.

So, again, on behalf of those of us in the Central Territory, welcome. I would invite you as, -- before Anne comes up, that I think there's going to be some, -- this is not church, so that, you know, you come in and sit in the back of the room, if you, -- I think there's gonna be some slides, is that not right?

MS. MARTIN: Right.

MR. MILLER: You might want to move forward so that you have a better view. Again, welcome, and I look forward to a fruitful meeting. And, I'll turn it over to Anne Martin.

MS. MARTIN: Thank you, Director Miller. I'm Anne Martin, the Deputy Director of the Exercises Division at FEMA Headquarters, and also Chair of the Strategic Review Steering Committee that's undertaking the process that we're here today to review. I see many familiar faces in the audience. Some of you were at Kansas City in September, and this is the overview, just as we presented in September, but, would like to begin again.

In December of 1979, when FEMA was given the responsibility for off-site radiological emergency response planning, the mission then, just as it is now, is the protection of public health and assuring public safety around commercial nuclear power plants. Well, fifteen years later, in approximately February of 1994, between February and September of '96, NEMA, the National Emergency Management Association, at their meetings, the PT&E Committee passed several resolutions regarding the REP Program. In addition, in 1994 to 1997, the National REP Conference attendees submitted proposed changes to FEMA regarding the REP Program. In May of 1995, the Nuclear Energy Institute submitted a White Paper suggesting changes to the REP Program. And then, actually, some changes were made in February of 1995 in Kansas City, when the Standard Exercise Report format was developed, fondly known as the SERF Report. Well, all of these activities, the NEMA resolutions, the National REP Conference resolutions, NEI White Paper, various comments that came out of regional REP conferences that had been held

around the committee, -- country, indicated that, yes, perhaps it was time to take a comprehensive look at the REP Program in 1997; about seventeen years after the program first began. So, in June of 1996, Director Witt directed that the first Comprehensive REP Program Review would be undertaken. Now, the national stage also set the stage for this, because the current administration was conducting the National Performance Review. That, of course, is looking at the public service rendered by the Federal Government to revalidate programs and procedures to be sure that they are appropriate for the current time. As a result of the Government Performance and Results Act, of course, the Federal Government was directed to take an in-depth at performance criteria and also the results coming out of active programs. There were two Acts that, when we began the strategic review of the REP Program that we had to take into consideration. One is the Federal Advisory Committee Act. That's an Act that's administered by the General Services Administration. And that, in essence, says that the Federal Government, to participate with the public in any policy-making, Federal committee must be established. That's been an eighteen to twenty-four month process. So, that told us that we would have to involve the public in a different way than perhaps our Government partners. The other Act that formed the basis for the strategic review is the Unfunded Mandates Reform Act. Many of you may be familiar with that. That was signed by President Clinton in March of 1995. And, in essence, it said that agencies

should seek out actively state, local and tribal views prior to implementing any programs, and that agencies should consult with a wide variety of Government entities, taking place as early as possible when a program is either developed or revised.

I mentioned the model that the committee has used is the Government's Performance and Results Act model. That, in essence, says that the first activity is a needs assessment. Look at the program; look at the procedures; look at the current need for the program; to assess the objectives. As I mentioned early, the objective in 1997, remains the same as it did in 1979. And that's protection of the public health and safety around commercial plants. The GPRA model dictates that strategies be developed for this particular review. And that we did. And, also, to identify the stakeholders. The stakeholders that we identified for the strategic review of the REP Program is, of course, anyone who has a stake or an interest in the program. As I mentioned, that certainly includes the local government, state governments, tribal governments, the public citizen, the power plants, and also other Federal departments and agencies.

Another model that we used that differed a bit from planning in the past, -- or, I should say in the past, quite often the Linear Planning Model is used. That is where a plan is developed, -- John mentioned when we were chatting earlier about the, -- inside the belt-way; often the plan is developed inside the belt-way, then that results in a draft document which is then

implemented. Well, to undertake the strategic review of the REP Program we used the Accordion Planning Model. And if you'll look closely at that overhead, the circles indicate the Strategic Review Steering Committee, and the squares, at the top and the bottom, indicate our stakeholders. So, you can see the Strategic Review Steering Committee began work and then went out to the state and local stakeholders. The Strategic Review Steering Committee, again, took in those comments, then we went to the Federal stakeholders. That was a meeting that was held in November, and I'll tell you a little bit more about that shortly. And now, we're at that third block which is the public stakeholders. We're here for your comments to the Strategic Review Steering Committee. And I might mention that all of the committee members are here today. Only at that point will a draft document be developed, and then that will go back out again for public comment in the Federal Register. Then, recommendations and any implementation would result from that.

So, let me take you on the actual, -- an assessment of how the strategic review has been conducted. In July of 1996, the strategic review was announced, and that was done in the Federal Register. That Federal Register notice, I'm sure many, or all of you perhaps saw it. That said,

"Tell us, -- this is an opportunity. Any comments you, perhaps, have wanted to make at any point in time, this is an opportunity

to do that. Just please send us your comments about the REP Program".

This notice was open for a hundred and twenty days, and resulting from that were sixty respondents with a hundred and seventy-eight specific comments. You'll see on the next transparency the major topic areas for those comments. As you can see, the majority of them were on exercises. The committee took those comments, along with the NEMA resolutions, the National REP Conference comments, all of the comments that have come in from regional conferences, and the NEI White Paper, studied those, deliberated, and from all of those concepts, -- from all of those comments, four principal concepts emerged. And those concepts you'll be hearing today. They'll be presented very shortly. The concepts are: Delegated State; Exercise Streamlining; Partnership in the REP Program; and the Radiological aspects of REP. We'll go into a bit more detail, as I mentioned, in the presentations.

Now, I'd like to tell you a little bit about the Strategic Review Steering Committee, because, again, we established the Steering Committee with an eye to bringing everyone to the table who could represent the management and the interest in the REP Program. In light of that, the Nuclear Regulatory Commission is part of the Steering Committee, both the Emergency Preparedness side of NRC, as well as the Response side. We have included the Preparedness, Training, and Exercises Regional Management, where the responsibility for the program

lies. We've included the Regional Advisory Committee Chairs, and also representatives from REP Policy and REP Training in FEMA Headquarters. And, I'd also like to mention that the REP Chairs for the territory are here. Woodie Curtis from Region 5, Larry Earp from Region 6 and Bob Bissell from Region 7. So, if you gentlemen would like to stand up for a moment, I'm sure you know everyone. Thank you.

So, taking all of those comments in January of '97, the Strategic Review Steering Committee began deliberations. Also in January of '97, change was made to the program. And I know all of you are familiar with the Regional Advisory Committee, or the Regional Assistance Committee; we established what's known as the RACAC Act. The Regional Assistance Committee Chairs Advisory Committee. And this was an opportunity for the RACAC chairs to deliberate together; to discuss mutual concerns; to look at providing for consistency across all of the FEMA region across the nation. The RACAC(s) had been in existence for, -- oh, over twenty years. And, of course, when FEMA became responsible for the program in 1979, FEMA took advantage of that infrastructure, but, in essence, the RACAC(s) had been, -- until 1997, had not had a forum for the Chairs to come together to discuss issues.

In July of '97, this committee reviewed the Concept Papers that you'll be reviewing today. And in September, as I mentioned earlier, we had the Government Stakeholders Meeting in Kansas City. That was designated stakeholders from local

governments, from the state governments, as well as tribal governments. In November of '97, just last month, we had what we called our *"Federal Forum"*. And that was representatives of other departments and agencies, or RACAC members who met in Dallas to, again, review the same Concept Papers that you'll be reviewing today. And this month, December, we are holding our At-Large Public Stakeholders Meeting. The first one was held on Tuesday in San Francisco. Of course, today we're here in the midwest, in St. Louis, and tomorrow we'll be presenting the Concept Papers in Washington, D.C., for the eastern territory. These meetings were noticed in the Federal Register, with press releases, and, of course, as I mentioned, are open to the public. And in January of 1998, we anticipate having a meeting and taking the Concept Papers to our own FEMA staff, who are responsible for the program.

So, what's in the future? Where are we going with all of the comments that we receive today and at the other public meetings? The committee anticipates that in March all of the comments will be assessed, will be looked at in the context of the Concept Papers, and by March of '98, proposed recommendations would be made to FEMA Director Witt. Of course, any recommendations would be published in the Federal Register, as I mentioned earlier, with a comment period. And then in June, roughly six months from now, specific program recommendations would be made to Director Witt. And, of course, after those

program recommendations are approved by Director Witt, any that are, or all that are, then the FEMA regions and headquarters would implement any changes that would result from that.

That concludes my briefing. Here's the agenda for today, indicating the Concept Paper presentation, and then the public comment period. As time allows, we may take some liberties with those times. What we will not change, of course, is your opportunity for comments. So, there will be adequate opportunity for that. I also would point out that we have a recorder who will be documenting the entire proceeding, and the transcript of today's meeting will be placed on the FEMA/REP home page or the FEMA home page on the web site. A transcript of today's meeting, the San Francisco meeting, and also the Washington meeting.

So, now, it's my pleasure to introduce to you Mr. Rick Auman. Rick is with Human Technologies, Incorporated, and we have contracted with Human Technologies to facilitate these meetings. So, Rick will now take us through the presentation of the Concept Papers.

MR. AUMAN: Thanks, Anne. I'll be the Moderator today. And I would like to just spend a few minutes talking about some ground rules for today so that we have the opportunity to both answer your questions about these Concept Papers, if you have any, and, as well, get your comments about these at the same time later on this morning. As you saw in your Agenda, each of

these Concept Papers will be presented in overview. For those of you who have been to other stakeholders meetings this will be more of a review than an overview, but for those of you who have not seen the Concept Papers before you'll get an overview of each of those Concept Papers. We would ask you during that time to ask, -- to hold your questions until the end of the presentations. There will be time for questions at the end of each presentation. So, if you'd just jot those down and wait until the end of the presentation we'll take them at that time. If you do have clarifying questions, questions about the Concept Papers, we would ask you to come to the microphone in the center here (indicating). With the smaller numbers we decided to just go with one microphone this morning. So, if you'd just come to the microphone in the front I'll just give you the nod when we're ready to start taking questions and you can come up and answer (sic) those. Later on today, our schedule is currently set to begin prepared comments at 1:30. However, if we get through these Concept Papers and there are not questions, we will begin prepared comments this morning as time permits. But we will stay until we have gotten through all of those comments that you have. We've asked that each of you limit your comments to five minutes. We did that specifically because we want to make sure everyone has the opportunity to provide comments. However, with the numbers being what they are today and the time we have available, if you would like to take another

shot, come back up and have something else to offer, we would certainly welcome that. We'd just ask you to go to the back of the line and then come through again. Because we only have one microphone, we'll simply cue up in the center here, and I'll indicate to each of you as you come through. There will be somebody there to brief you on
the, -- before you begin your comments, we're gonna ask you to give us your name and your affiliation. And before you begin your comments, -- that will help our, -- a stenographer over here who's taking notes, as well as let everybody else know the context of your perspective that you're offering here.

We will take the last comments at 3:55, if it lasts that long, and we'll end at four o'clock. Again, we will accept all written comments, but given the amount of time we have today I don't think we'll go that long. But, we'll certainly, -- if you have those things to say, we'll stay that long and listen to them. Are there any questions about the ground rules for today?

(No Verbal Response)

MR. AUMAN: If not, we'll start wit h our first presentation on the Partnership Paper. That will be presented by Sharon Stoffel and Mary Lynne Miller.

PARTNERSHIP CONCEPT PAPER

MS. MILLER: Good morning. My name is Mary Lynne Miller, I'm with FEMA Region 4 from the Atlanta Regional Office. With me today is Stanley McIntosh, who's my very able slide

flipper. Stanley is from FEMA Region 2 in New York, and Sharon Stoffel is with FEMA Region 1 in Boston. So, you've got kind of a wide variety of geographic locations for you. So, John Miller, -- there's representation I would say from probably all over the country here.

As Anne indicated, basically the role of the committee was to take in comments, and, of course, this is true of all the papers, but just to highlight, -- to look at the comments that we've received, take in the feedback from the stakeholders and assimilate these into overall broad Concept Papers. And what seemed to emerge fairly quickly for us as we look through these papers, was a theme of increased partnership and increased open communication. So, basically, that seemed to emerge as the partnership concept. And we're presenting that to you first today, because it is more or less of an over-arching subject. So, it will probably kind of set the stage for the other Concept Papers in general. And, of course, the basic issue is, should the role traditionally assumed by FEMA be modified from that principally formerly of an evaluator of state and local ability to implement emergency response plans, to one more defined as a partnership, with a broader relationship, and, again, to include more open communication. And as we looked at the topic it seemed to pretty much emerge into four primary topic areas. And I will present the first two sections of that, and then turn it over to Sharon, who will give you the second two.

The first two sections are, -- the first is Performance, which centers on basic aspects of actually accomplishing the program. The second is Policy, and the different modes of developing actual policy. Sharon will then pick up with Technical Assistance, and ways that can be increased, and Federal exercise participation. And, with these four topic areas I think I really should point out that they are really rather independent. In other words, any of these various areas could be implemented without the others, and really would not affect the integrity of any particular one. But, of course, the more of these that would be adopted, of course, the partnership itself would be substantially enhanced.

Beginning first then with the Performance Section. Many commenters proposed that federal, state, local and tribal government entities all have the same goal of protecting health and safety of the public. And, so, many comments received focused on providing more flexibility to state and local governments, and reducing federal oversight in general. And, many commenters relay that the environment that we exist in now is particularly applicable to this type of environment in REP, in the way it has evolved over the years since the program was created. First, over the years that the program has existed, a very excellent definition of the capability that must exist within a state and local government to protect the public has been refined fairly intensively. And at the same time, the

experience level of those entities has increased over those years. So, the commenters maintain that that combination of definition and experience really take us to a point where a higher degree of control over the program by those entities is appropriate.

It's kind of a busy slide, let me kind of walk you through this. The model that's being used, and I think, -- I know this is probably not new to too many people. Anne mentioned in her presentation about the Government Performance Results Act essentially being used as a model by the Federal Government in strategic planning. In the context of REP, this program, -- GPRA would really involve a tier structure of strategic goal setting. And, of course, starting at the top with Goals, which support the mission, it's envisioned that this would, -- or could be more or less of a national process of setting goals for the program. Then moving into Results Focused Objectives, and normally, a course at that level of strategic planning performance measures are added to really gauge where you are in the process. Which the envision of that is that it would be a national process, with stakeholders involved, so there's a common direction for the program moving. And then, at the next level, in more of a state/local unique aspect, after those national goals have been established, to move into unique outcomes. In other words, not prescriptive in how you would get there, but just where you're going; just pretty much the model for GPRA. And those would be

unique to state and local governments. And, I guess the basic question that has emerged, -- we had that suggested in a number of papers, I guess the question that would emerge from that is, -- and this is the feedback we would like to hear from you, is REP already there? In other words, is the program already well focused enough that the objectives and goals are already well set enough that it's not really necessary to go back and go into a strategic review beyond a course, -- the process that we're overtaking here.

Now, at the bottom of the slide you'll see on the left-hand side the initials *"PPA"*. That is a Performance Partnership Agreements. And, basically, the National Performance Review Act recommended that Performance Partnership Agreements, or PPA(s), be established between various levels of government. And, this is one way that the Strategic Review process can take place. And a number of commenters recommended that REP be included in the Performance Partnership Agreements that FEMA has with each state in a non-disaster context. Of course, the funding that comes from the utilities to state and local government does not come through FEMA, and this paper does not recommend a change in that process to insert it through the PPA. The PPA is really not a funding document, but a strategic goal setting document. And, actually, the paper points out that the use of the PPA in the sense that as long as the strategic goal setting process takes place, the PPA aspect is somewhat optional. But, we'd like to

know what you think in terms of that placement of REP in the PPA. Next slide please, Stanley.

There's a little bit of a disconnect in terms of the lettering between the paper and the slides. So, if you're familiar with it let me just, -- so you're not confused. There is a Section B in the paper itself, it was an evaluation section. And we found as we moved through the paper that it duplicated the Exercise Streamlining Paper, which you'll hear later on this morning. So, we've actually moved that section into that paper. So, there's a little bit of a disconnect. Actually, Policy Development is Item C in the paper that you have in front of you, moving into that second area. Excuse me. I'm trying to come down with a cold; I've been traveling too much.

In the Policy area, the recommendation was to, of course, broaden stakeholder involvement in the development of ongoing policy. And various input measures were recommended in the input, including use of workshops and conferences, among others. And, Anne mentioned the Kansas City conference, where the Standard Evaluation Report Format, or SERF was developed. And that was brought up as a positive process model by a number of the commenters. And, the comments, frankly, that we've received to date, from our stakeholders as we've moved through this process have been very positive in terms of the feedback and feed-in. I know some of you were in Kansas City, and, overall, we've had a fairly good approval rating on that increased

stakeholder process. And, of course, the pros of continuing, and, in fact, increasing stakeholder involvement in policy development include increased ownership, improved consistency, and broader access to technical expertise. Which, of course, exists at the state and local level. It does have to be recognized, however, in going through that type of process, as we've discovered as this committee, that it does take time to get that stakeholder input. And, so, in order to get into that in-depth analysis, you know, one must accept that you're going through a more lengthy process. Certainly what you get at the end is certainly more worth it. That's all for policy. I'll now turn it over to Sharon, who will pick up for the balance of the paper. Thank you.

MS. STOFFEL: Good morning. I'm going to be talking with you about technical assistance ideas that were conveyed to us. Let me first explain that we're using the term *"Technical assistance,"* but not in a purely technical way. The context is much broader than purely radiological technical assistance. It would also extend to planning and programmatic kinds of assistance.

As Mary Lynne has suggested, there were a great deal of comments suggesting that FEMA shift its emphasis away from prescriptive evaluation to one, -- a role of more technical assistance provider, to states, tribal nations and local government. And, by doing this, we would improve the partnership

relationship of FEMA with these various entities; we would move from our role of evaluator, to one of facilitator/educator. And, with the ultimate desired goal of improved customer service. Some of the suggestions in the paper that had to do with technical assistance included plan improvement. Which would mean that we would, -- we at FEMA would provide more assistance with emergency preparedness plans. A second consideration has to do with training assistance. And, again, the recommendations, or the suggestions in the paper had to do with FEMA's increased participation in training efforts on the part of states, tribal nations and local governments. Courtesy evaluations are happening in parts of the country, and the idea would be to continue and to expand performing these courtesy evaluations, which are less threatening, and when they're conducted during rehearsals, give the exercise players an opportunity to correct action midstream.

Radiological monitoring. It was proposed that FEMA work with the other Federal agencies to identify radiological monitoring and assessment capabilities to determine where more effort is needed and to work with the affected entities to accomplish meeting those needs.

It is suggested in the paper that we make use of the internet. And one means of doing that is to create a web site for technical assistance.

Emphasis on corrective actions versus grading. The

idea would be to correct issues during drills or exercises, and with less emphasis on the ultimate grade, the real emphasis being on the learning experience. And that is felt to improve relationships, as has been noted before. It was suggested that FEMA take a more active role in the emergency alert system. Special needs: Data assistance. FEMA could provide a role of assistance in dealing with the Privacy Act issues surrounding that area of activity. There were other areas mentioned, principally, technical assistance conferences and more site visits. Essentially, the effort being one of getting out into the field and working with our entities more on a face-to-face basis.

The last part of the paper has to do with Federal Exercise Participation. If there were to be more extensive federal participation in exercises that would give our partners improved knowledge of federal plans and the resources that would be expected if there were to be a real incident. It would afford us the opportunity to exercise the relationship between the Federal Radiological Emergency Response Plan and the Federal Response Plan. A major consideration in having more federal participation is resources and there would need to be a far greater commitment of resources on the part of the federal agencies involved, in order to commit to a desired greater level of federal participation.

Those are the four major areas of our, -- of the

Partnership Paper. I'd like to thank you for your attention.

MR. AUMAN: We have time for questions now, if you have any.

(Mr. Brown, Standing For Question)

MR. AUMAN: Yeah, please.

MR. BROWN: My name is, -- is this on?

MR. AUMAN: Flip the switch there, it may, -- right on the side. There you go.

MR. BROWN: There we go. My name is Charles Brown, with the Southern Nuclear Operating Company, Plant Atch (phonetic), in Birmingham, Alabama. A question I want to bring up is on the Item 9, FEMA liaisons spending more time in the field. And, you're talking down here at the bottom that funding would be a consideration. Are you talking about increased funding or a decrease in funding?

MS. MILLER: I believe the presumption, -- I don't think this is on.

(Pause)

MS. MILLER: I think the underlying presumption in the effort that we've all undertaken in the streamlining effort is not to look to increasing funding. I think it's, -- our orientation will be to, -- more efficient use of funding and a possibility of a lessor level of activity in terms of resource commitment. But, essentially, I think reallocation of resources would be the primary consideration in terms of use

of current manpower.

MR. AUMAN: Any other questions?

(No Verbal Response)

MR. AUMAN: If not, I'll thank Sharon and Mary Lynne and Stanley. And, our second paper on Radiological Focus will be presented by Falk Kantor, Tom Essig, Bill McNutt and Marcus Wyche.

RADIOLOGICAL FOCUS CONCEPT PAPER

MR. KANTOR: Good morning. I'm Falk Kantor. I'm with the Nuclear Regulatory Commission. I'm a member of the Strategic Review Steering Committee. And I'll be assisted in my presentation here this morning by Tom Essig of the NRC, Bill McNutt of FEMA, and Marcus Wyche, also of FEMA.

If you look at the REP Program and how it developed and how we got to where we are today, you'll see there was some guidance that was issued in the early '70(s), if you're familiar with the publication called *"NuReg-75/111,"* referred to in some places as the *"Checklist"*. That document recommended that the plan format be a general State Emergency Plan, a stand-alone, a Radiological Emergency Response Plan or RERP, and then standard operating procedures. Well, as the world of emergency management has matured, we have moved more toward a direction of all-hazards planning. In fact, if you examine FEMA's Mission Statement today, one of the goals of FEMA is to establish, in concert with FEMA's partners, a national emergency management system that is

comprehensive, risk-based, and all-hazards in approach. So, we received quite a few comments related to moving the REP Program more into the all-hazards approach to emergency management. And a related issue developed, as we looked at the all-hazards approach, and the issue became, *"Would the REP Program be more effective and streamlining by focusing more on radiological activities and less on non-radiological activities?"* So, that is the issue in this Concept Paper.

As background, our committee reviewed the emergency planning standards, the evaluation criteria, NuReg-0654. We looked at the exercise objectives in FEMA REP-14, the demonstration criteria, and also the points of review in FEMA REP-15. We examined the regulatory basis for REP as presented in NRC and FEMA regulations to see if there was any impediment to moving in this direction. And, we also took a very preliminary look at the extent of changes that might be required in program guidance documents if we moved in the direction of focusing more on rad and less on the generic aspects of emergency response. But, keeping in mind all the while, that under the current program all emergency planning standards must be met, and the resulting REP Program as been mentioned earlier, must continue to provide reasonable assurance that the public health and safety can be protected. However, how this would be accomplished may differ from what is already in place. And that's the direction our strategic review is moving in.

In looking at the all-hazards approach FEMA has issued a guide, State and Local Guide 101, Guidance For All-Hazards Emergency Planning was issued September '96. And it recommended a basic emergency operations plan which would be composed of a basic plan, functional annexes made up of the core functions of EOP, such as direction, control, communications and so forth, and then hazards-specific appendices which could, of course, be a nuclear power plant accident. And, several states have modified their plans to resemble the all-hazards approach. Some states are more advanced than others. In Kansas City we got feedback from quite a few of the states and local organizations present as to how they have attempted to accommodate REP in their all-hazard planning. But, it became apparent to us at least, that the format of the plan was not really the issue. If you just reformatted your plan to fit an all-hazards format from a strategic review point, not much has really been gained. And then, regardless of the format, the personnel that they're going to implement need to be familiar with the plans and procedures and be able to demonstrate that they can respond to an accident.

So, as I mentioned, we reviewed the NuReg-0654 planning standards and evaluation criteria, and it quickly became apparent that these do not readily lend themselves to dividing into a radiological versus non-radiological standards or evaluation criteria. It looked more useful to us to look closer at the exercise objectives in REP-14, the demonstration criteria in

(14), and the points of review found in the FEMA REP-15. In looking at these exercise objectives and trying to identify the purely non-radiological ones, we identified a few, four you see listed there. And even these can be argumentative as to whether they are purely non-radiological in function. But, there are a couple that, you know, clearly were, -- could be considered non-radiological. Now, if you look at the objectives that have components of both radiological and non-radiological aspects to them, there are quite a few more as you can see, listed there. Objectives such as, -- oh, direction and control, communications alert and notification, all have aspects of radiological versus generic response activities. And then, exploring further, if you look at the objectives that are clearly radiological in function, you see there's another group that can be readily identified as being primarily radiological functions.

So, that was our look at that. And none of these are set in concrete, by the way, that was just our view of the objectives and how they might lend themselves to radiological versus non-radiological.

And state and local governments have been demonstrating the ability to meet these objectives in exercises over the years, and they're quite comfortable in that approach. And, the question developed, *"Is it practicable to separate the objectives demonstration criteria and points of review that are considered radiological, from the ones that are non-radiological? And if*

so, which ones?" That was one of the questions we have on the committee. For example, if you look at the objective of communications, it appears to be generic in function. Every exercise, all-hazards exercise or any response to actual events involve communications of some certain extent. However, some of the demonstration criteria, some of the aspects of communications are definitely radiological, such as communications between various emergency response facilities, communications between response facilities and field teams, and other communications involving the radiological matters. Now, the question is, *"Can the functions be separated without affecting the execution of the exercise?"* Another objective we looked at for an example, is staffing. There is a guidance that staffing, -- full staffing should be demonstrated once every six years, but, twenty-four hour staffing appears to be generic, and could be demonstrated in other means. However, there is an aspect to it that involves radiological activities, and that's when one shift replaces another, a briefing should take place, informing the oncoming shift of the status of the plant, radiological conditions, effective actions and that sort of thing. So, there's a radiological aspect to that function also. Then, if you look at the concept of the integrated exercise itself, the regulations have some requirements or discussion of the, -- an exercise. An exercise should test the integrated capabilities of all the participating organizations, the licensee, state and local

response organizations. The regulations speak about testing the major observable portions of the on-site and off-site response agencies and mobilization of resources. And the regulations, of course, also speak about requiring a exercise on a bi-annual, once every two year, basis.

So, in order to conduct a truly integrated exercise as our regulations require, it's necessary to include some of these non-radiological aspects in the exercise, the so-called *"glue,"* communications, direction and control, mobilization, staffing. Those sort of things all are required to have, -- to be performed when you do a full exercise. So, in that sense, it is difficult to separate out the radiological from the non-radiological.

So, as a working group here in the committee, we developed a possible alternative approach to the fully integrated exercise, and Tom Essig is going to discuss that with you.

MR. ESSIG: First, we'll walk you through a flow chart here that we have. The alternative approaches, as you can see here on the left, we have Discrete Drills, Readiness Appraisals, Exercise Credit for Real Emergencies, Expanded Use of the Annual Letter of Certification. Those would feed into a full participation exercise which may be of lesser frequency, and that, in turn, would feed into an overall adequacy finding.

Next, I will walk you through, -- and the next four slides will discuss these possible alternative approaches in some additional detail. Discrete drills are certainly something that

is not a new concept, and we're not trying to advertise it as such. We already have a number of instances where drills are done apart from the full scale exercise. And examples of these are the field monitoring teams could be demonstrating expertise in using survey meters and taking samples, quite separately and apart from the full-scale exercise; emergency workers demonstrating capability and knowledge of dosimetry; direction and control people with direction and control responsibility showing they understand the technical information coming from the utility rad health officials and so forth. And then other aspects of discrete drills, emergency medical staff, this is quite often done as a discrete drill as many of you know, currently. And health physics drills also could be done as a discrete, separate drill.

The other concept that was shown on the flow chart were Readiness Appraisals. Now, this, -- the term *"Readiness Appraisal"* is something that is, -- would be somewhat new to the program, although its elements are taken from, -- many of them are ongoing activities, such as walk- throughs, for example, which might be synonymous with a table top inspections, or something that would be relatively new. But, certainly a review of inventory, -- or a roster review and an inventory would not be necessarily new. Audits of resources and verifying current information listed in the Letters of Agreement would be another way of accomplishing or determining whether or not a state or

local government was ready.

The other possible alternative approaches, as Falk was mentioning, the non-radiological objectives could be demonstrated in an all-hazards exercise, and then the results from that could be coordinated with the REP evaluations. Expanding the exercise credit for real emergencies is something that is currently done. And this concept would simply continue that, and perhaps even expand on it. And, lastly there, the State Assessment of Plan Preparedness, we could use an expanded Annual Letter of Certification as another possible alternative approach.

Now, we realize that focusing on the r adiological aspects of REP may require current changes in the REP Program; a change in the conduct and frequency of exercises as an example.

So, we'd like to leave you with some issues to ponder which we're thinking about, and we'd ask you to think about as well. First, can FEMA make its adequacy findings based on drills and exercises, other preparedness activities combined with less frequent, full-scale exercise participation? And if so, how? Can we focus on the radiological aspects without affecting the exercise process. That is, or would we lose something there? How, and with what frequency can we make judgments on reasonable assurance under this, -- under a revised format? Would more focus on the radiological function fragment the exercise process? Does the emphasis on radiological aspects, and less emphasis on generic, merit further consideration? And, with that, I'd like

to turn it over to Bill McNutt, if you have some additional comments.

MR. MCNUTT: Good morning. I'm Bill McNutt. I'm with the State and Local Preparedness Division at FEMA Headquarters. And I just want to emphasis that, --

MR. AUMAN: I'm not sure your microphone's working, Bill.

MR. MCNUTT: It's not working?

MR. AUMAN: Try again. See if that's turned on. Talk a little closer to it.

MR. MCNUTT: All right. Can you hear me?

MR. ESSIG: Just speak louder, Bill.

MR. MCNUTT: All right.

MR. ESSIG: This one (indicating), isn't working. If they can hear you speak, --

MR. MCNUTT: Okay.

MR. ESSIG: -- okay. Go ahead and speak.

MR. MCNUTT: I just want to emphasize that the essence of this concept is the alternative approach. An alternative approach by which FEMA would make findings on the adequacy of off-site plan and preparedness. As you've just heard, the elements of this approach include discrete radiological drills, which would involve an evaluator or maybe two evaluators at these various discrete drills. Much less than what is now required, a more evaluator-intensive exercise. For these drills you plug in

the readiness assessments, and FEMA has a document called *"The Capability Assessment for Readiness,"* which will assist a state in doing these type of things, and documenting them. We add to that, your participation in, -- state participation and locals, in other types of exercises other than REP, as well as expanding the credit for responding to real emergencies, and then expanding the Letter of Certification, whereby a state certify that they have done certain periodic requirements from the, -- from our guidance in NuReg-0654. You tie these all together, and what have you got? Well, you might not have much unless you then step back and look at the frequency of the exercise. And to that proposal would include a view of that frequency to perhaps, maybe relaxing it to once every three years or once every four years.

So, that's the essence of this alternative approach. And we'd be glad to hear any comments you have.

MR. AUMAN: Thanks, Bill. Questions?

(No Verbal Response)

MR. AUMAN: No? If not, thank you, Bill, Marcus, Tom and Falk. The next presentation will be on Exercise Streamlining. That will be presented by Janet Lamb, Woodie Curtis and Bob Bissell.

EXERCISE STREAMLINING CONCEPT PAPERS

MS. LAMB: Thank you, Rick. Good morning, everyone. My name is Janet Lamb, I'm the Regional Assistance Committee Chairperson from FEMA Region 3 in Philadelphia. And with me is

Woodie Curtis, the Regional Assistance Committee Chairperson from Region 5 in Chicago, and Bob Bissell, the Regional Assistance Committee Chairperson from Region 7 in Kansas City.

When we initially began our review of your comments, it became evident very quickly that many of those comments, -- and I think there were eighty-nine separate comments that specifically related to exercises and the exercise evaluation process. We took all of those comments and separated them into like groups, and we quickly also discovered that there may be several different ways and methods that we could use to come to the conclusion that reasonable assurance does exist, that the health and safety of the citizens around our nuclear power stations can be protected.

We have come up with eight areas that we will discuss in a few minutes, that could be used beyond just the exercise evaluation process, to come to those reasonable assurance conclusions. We would like to say that we would consider each of these, not individually, but as part of the group, to provide that reasonable assurance. While we were developing the Exercise Streamlining Paper we also looked to developing an evaluation tool that was much more results oriented than the current evaluation tool. And a sample of what we came up with has been attached to the Exercise Streamlining Paper. We would like you to be aware that this is only one approach of how the evaluation tool could be modified to be more results based, than objective

driven. And, Bob Bissell will now discover, -- discuss each of the eight topics that are contained in our paper.

MR. BISSELL: Thanks, Jan. Morning. As Jan said, we consolidated the comments down to eight separate approaches to streamline the exercise evaluation process. Some of the items I'll go over this morning you've heard in more detail this morning in the previous papers. What we've tried to do is tie all these items back to the exercise evaluation process.

The first approach is the results oriented exercise evaluation process. Currently, the evaluation process consists of thirty-three objectives which were introduced in September of 1991. They do contain a sizeable number of points of review which much be successfully demonstrated to meet the requirements of each objective. As most of you know, this is a very structured process and leaves very little latitude for the evaluator. The proposed process is what we've termed the *"Results Oriented Exercise Evaluation Process"*. It does have a reduced number of objectives. The checklist format is gone, and the objectives are much more broad in nature. This proposal allows the players to complete an activity without following a specific checklist. For example, if a emergency management decision was made to perform a certain emergency response function, and that decision did not necessarily follow the plan as far as procedures, responsibilities or resources, but the appropriate decision was made and completed, that would not be an

exercise issue. This certainly gives the players much more latitude to reach a desired outcome. Evaluators would concentrate on the outcome of the exercise participation and not the means to complete a task.

The second option which was discussed in quite a bit of detail earlier, was to have an increased focus on the radiological aspects of REP. Evaluators would concentrate more on the radiological objectives and less on the non-radiological objectives. Those non-radiological objectives could be demonstrated and/or observed by other means, such as credit for real events, other non-REP exercises and staff assistance visits. Some of the points of review and objectives do focus on response procedures and capabilities which apply to any type of emergency, such as fires, flooding, tornado and other natural and technological hazards. In addition, some of these objectives are routinely conducted by emergency responders during the various non-REP exercises, such as hazard material exercises, and chemical stockpile emergency preparedness exercises, and other natural disaster exercises. Credit could be granted for these actual responses and the exercise activity. The FEMA staff could perform staff assistant visits on a regular basis to verify or observe these efforts. Next slide.

The third approach is the Consolidation of Like Objectives. We all know, I think, by now, that similarities between objectives and repeated experience in the exercise

evaluations provide evidence that several objectives can be combined without affecting the evaluation process. This certainly would eliminate redundancy in the points of review and shorten the exercise process, possibly reduce the number of evaluators required at the exercise, and the cost of the exercise. Some of those potential objectives that could be combined are listed on the screen. There are certainly more, but those are just a few to give you an idea of where we were heading with this concept.

The forth approach is to update REP policy and guidance. And, basically the commenters felt that FEMA has not done a very good job in updating the REP policy and guidance materials to reflect changes in the program. Some examples would be the change to the emergency alert system, and the issuance of the new EPA 400 Manual, Protective Action Guides. Another concern was with the manual itself. The commenters felt that it should be designed to be user-friendly and easily updated with page inserts.

In summary, I think our goal would be to create a system which would quickly adopt changes in the program and design an exercise manual which can be easily updated. Next slide.

The fifth approach would be to change the frequency of objective demonstration. One of the options discussed would be to start the exercise at the post-emergency phase, and eliminate

the emergency phase. The state and locals would like to have that option. I think they all feel that we've probably beat to death the emergency phase of the exercise process, and they would like to spend that time normally spent on that phase in performing other objectives. Less Frequent Demonstration of Some Objectives. Certainly the most prominent theme there was medical drills. Medical drills, most evaluators felt that medical drills should be evaluated every two years, instead of on an annual basis. More Frequent Demonstration of Some Objectives. There was a lot of concern or interest, I guess, would be a better word, in conducting more recovery and ingestion objectives. And, again, this ties back to the first suggestion on exercise phases; the state and locals would like to have at least the option to conduct those ingestion and recovery objectives if they felt they needed to strengthen those areas.

The last item that was suggested to us, -- and most felt very strongly about this, was the Federal agency should play more frequently during the ingestion exercises. Most felt the need to know more about the Federal agency's roles and responsibilities as it relates to their Federal Radiological Emergency Plan. Next slide.

The sixth approach was Out of Sequence Demonstration. Currently, we do perform a lot of out of sequence demonstrations, but there seemed to be an interest to expand those objectives and those facilities, that we do allow that to occur. Other

activities that might qualify for this would be nursing homes, correctional centers, radiological laboratories, ingestion field teams, traffic and access control objectives, dose calculations, monitoring and decontamination facilities, just to mention a few.

Another suggestion was to also do the plume and ingestion out of sequence. A lot of commenters felt that trying to cram those many objectives in two days was quite, -- too much, and it didn't allow them to actually concentrate on the objectives and performing those functions. They would like to see the ingestion portion possibly done during the off years. Do the plume phase the first year and the ingestion phase the second year.

Another area of concern was the feedback that FEMA provides during the post-critiques. There were a lot of concern, -- there was a lot of concern that FEMA doesn't do a very good job in this area. They would like to see immediate feedback provided to the players immediately following the determination of the drill or the exercise, while the players are all there and their, -- the exercise is fresh on their minds. They would certainly like to see more emphasis put on the positive things accomplished, and, -- along with the concerns.

Another issue that was recommended to us was the Issue Correction. The suggestion was made that the issues could be corrected as soon as they're identified. For example, if the

evaluator had a concern with the monitoring procedures, for example, at an emergency worker monitoring decontamination station; it's possible that the evaluator, in conjunction with the state, could provide some on the spot training and redemonstrate an objective while it's fresh on that player's mind. The issue could be documented as an exercise issue in a Standard Exercise Report, with a statement indicating that it has been corrected and no further action is necessary. This would be a positive and more meaningful experience, and it would result, -- a positive and more meaningful experience would result when this questionable performance was identified and immediately corrected, instead of delaying demonstration until a later date. As some of you know, sometimes that's not done for up to two years.

A seventh approach is to expand the exercise credit. Currently, there are only two objectives that actually qualify for exercise credit, that's off-hours and unannounced drills. I believe there has been some flexibility in the regions to expand some of those objectives, but the commenters felt that they would like to expand that greatly to include objectives such as mobilization, facilities and equipment, communications, media information, rumor controls, schools, traffic and access control, just to mention a few.

One of the other concerns that were raised was that FEMA should develop a standard implementation guideline that

clearly identified the objectives that would qualify for exercise credit, and they require documentation that they need to submit. Next slide.

The last approach is sort of consolidation of some of the previous topics we've discussed. There was a concern, -- overall concern, that we should develop an alternative evaluation approach in lieu of the formal exercise evaluation process that we currently have now. One of the items suggested was to, -- and you've heard a lot about this already this morning, was for FEMA to conduct staff assistance visits. And they could conduct personal interviews with players during these staff assistance visits, during training sessions and out of sequence drills and exercises, to verify credit for these objectives demonstrated during other activities.

Out of Sequence Evaluations, we talked about that earlier. Again, they would like to see those objectives that qualify for that to be expanded. Possibly, include doing some of those out of sequence evaluations; instead of within the one week window that we typically do out of sequence evaluations, perform some of those objectives and facility demonstrations during the off years.

Credit for Actual Events, we've discussed that. Let's expand those objectives that can qualify for credit.

Annual Letters of Certification should be expanded to include items such as monitoring equipment maintenance and

calibration dates, personal dosimetry operability and maintenance records, potassium iodide requirements and shelf life, communication drill results and self-assessment reports. These elements, -- these objectives, could be done through the Annual Letter of Certification, could be addressed in lieu of the formal exercise evaluation process. And verification of some of these objectives could be submitted in the Annual Letter of Certification, and/or accomplished by staff assistance visits.

The last item is Self-Assessment. There are some sites where jurisdictions below the county level do participate. The proposal there is that, -- let's allow those organization below the county level to perform self- assessments and self-evaluations. Those demonstrations, and the results of those demonstrations, could be documented in the Annual Letter of Certification as mentioned earlier. That concludes our demonstration, -- or comments.

MR. AUMAN: Thanks, Bob. Questions, please?

(Ms. Drey, Standing For Question)

MR. AUMAN: Yes.

MS. DREY: My name is Kay Drey. I'm a citizen from St. Louis. Could you please describe the ingestion and recovery exercises, and also the plume and ingestion demonstration?

MS. LAMB: The ingestion and recovery phase of an exercise involves a 0 to 10, -- to 50 mile EPZ around a nuclear

power plant, and basically deals with the ingestion of food products and the possible contamination of those food products and the steps we would take, or the state and local government would take to protect the citizens from ingesting those types of food products. The recovery phase, the recovery reentry and return phase, deals with the identification and the possibility of emergency actions that must be taken to reenter an area that may not have been contaminated, to stay away from an area that may be contaminated, and all the actions that would be required to implement those protective actions for the public.

The plume phase of the exercise deals with the emergency part of the exercise, and demonstrates the capability to protect the citizens living within a 0 to 10 mile area of a nuclear power plant, and all those activities leading up to, and protecting, evacuating those people out of harms' way, so that there is no possible threat of their receiving radiological contamination.

MR. AUMAN: Any other questions?

(Ms. Paice, Standing For Question)

MR. AUMAN: Yeah.

MS. PAICE: My name is Sandra Paice from Nebraska Emergency Management. And the one question that I have is in the alternative evaluation approach there was nothing mentioned about possibly using other members of state staffing your region. Say, Iowa is in our region, having their staff come as evaluators, as

opposed to using FEMA evaluators all the time. Can you clarify, is that a possibility as an alternative approach to evaluations?

MR. BISSELL: Yes. That has been discussed by the committee, and was set up as a separate focus topic, which we're currently working on.

MR. AUMAN: Go ahead.

MR. MORRIS: I'm Kevin Morris, with Detroit Edison. You mentioned, Mr. Bissell, self-assessments would be, -- could be utilized by government organizations below the county level. I'm curious why you didn't, -- why you're not mentioning them for use at the county or state level? As you know, the NRC relies very heavily on self-assessments in their determination of the adequacy off-site emergency preparedness programs.

MR. BISSELL: Well, there were a few comments addressing that very issue. And some of the feedback we received in Kansas City, indicated that resource may be a problem for the state and locals to provide a sort of a self-assessment, and also participate in the exercise. But, that certainly is an issue that's open for discussion.

MR. AUMAN: Any other?

MR. BISSELL: Jan wants to speak.

MR. AUMAN: I'm sorry. Go ahead.

MS. LAMB: There's a reason to look at those areas below the county level because of the resources needed to evaluate these locations. But, in the commonwealth, sometimes

the state law demands that municipalities lower than the county level participate in exercises, even though these jurisdictions may not have any lead roles in the response, they are the first responders. So, the state law demands that they have an emergency response plan, and, therefore, it's required that any entity within the emergency response plan be evaluated during that full-scale exercise. That is extremely difficult, especially in Region 3 in Pennsylvania, where many of our evaluation teams exceed seventy people.

MR. AUMAN: Any other questions?

(No Verbal Response)

MR. AUMAN: Okay. Thanks, Bob, Janet and Woodie. Our last Concept Paper will be Delegated State, which will be presented by Steve Borth and Rosemary Hogan.

DELEGATED STATE CONCEPT PAPER

MS. HOGAN: I'm Rosemary Hogan. I'm from NRC Headquarters, the Incident Response Division. And my colleague is Steve Borth from FEMA's Emergency Management Institute.

The Delegated State Concept was an idea conceived in our January meeting based on several themes that we received in the Federal Register comments. It is a different concept, but it has a precedence in other federal programs. But, it would still allow FEMA to make the reasonable assurance finding to the NRC. If approved, this paper would need to have many of the details implemented. Unlike the other three Concept Papers, there are

fewer details included in this concept. Delegated state status would be given to a site. The site would be, -- already have their (350) approval as a baseline to apply for this status. The Annual Letter of Certification that currently exists would incur an increased level of importance. It would be the vehicle that FEMA uses to determine whether there was a reasonable assurance finding. States would include all of the details of their program as they have implemented throughout the year in the Annual Letter of Certification. FEMA could provide some limited supplemental verification of the information provided in that letter.

There would be an application process for any state or site that would wish to become a delegated state. This would be, -- include a request from the governor or his designee, including the request for the application and including all of the information that would be required. The program would be voluntary. The State would continue to conduct exercises. The Annual Letter of Certification would be a standardized format that does need to be developed. It could include information that already exists. It would include the Exercise Report and corrective actions, and any plan updates that had been implemented throughout that year. The Annual Letter of Certification would incur some increased importance because it would be the vehicle that FEMA uses to make their overall finding. FEMA would rate each function in the letter and

determine whether it was acceptable; acceptable with recommendations for improvement; or unacceptable. Based on those functional assessments FEMA could make an overall finding that reasonable assurance exists; reasonable assurance exists, but the program does need improvement; reasonable assurance does not exist. Then the State would have to provide a corrective action program to improve those areas. FEMA could monitor those by providing supplemental visits. If those actions were not corrected, FEMA could lose, -- could take away the delegated state status.

One of the major functional differences in this concept is that the states would do their own evaluation of exercises. As designed, this would include their evaluators that would be trained to, -- under a proposed program, and meeting certain criteria. They could be evaluators from state, local or others, as the State designed in their program. And FEMA could provide some supplemental evaluators if requested by the state.

Another function of the Delegated State Program would be the credit policy. Now, that was discussed in a previous paper, but this credit policy could also be applied to the Delegated State Concept. And that would be a situation where the state could determine that an actual event could qualify for some credit, and they would describe that in their Annual Letter of Certification, to be reviewed by FEMA. If FEMA thought that there were any problems with the use of that credit policy they

could go back to the state and request some information, or some supplemental actions.

In addition to reviewing the Annual Letter of Certification, if there was any information in that that FEMA had a question about, they could also go out and request some additional information from the state.

The periodic verifications that would be, -- result from these reviews of specific aspects of the program could be increased, if there was some concern about the state performance, or decreased if there was good performance.

One of the details that would have to be addressed in this, -- if this concept were recommended, would be the financial details. This could be a situation where the cost would increase to the states, and, therefore, the funding of that would be of great concern. FEMA could possibly pass through funding that it receives; utilities could provide direct funding to the states; the states could fund as a whole program on their own; or there could be some other combinations or options.

Because this program would be a very new concept, the committee believed that a pilot program would be appropriate. So, a few states could be designated as pilot states and the program would be implemented in a phased-in program. Any issues or details that were addressed in this phased-in program could be corrected in the implementation phase, if this became a full fledged program.

States would not have to become a delegated state. If for whatever reason states felt that they were not an appropriate candidate, they could remain as a non-delegated state in the current REP Program, as revised by other aspects of this committee. The negotiated extent of play for exercises would continue, and the standard letter, -- the Annual Letter of Certification, as may be revised by this strategic review, would be used.

Some advantages to states that choose to be a delegated state, of course, one of the themes in the Federal Register comments was independence and flexibility, and the states know better how to implement their program. This Delegated State Concept would provide those opportunities for the state. Procedures and the methods that a state would use would be their own. That could provide some increased ownership of the program. It could be less costly, depending on how a state implements the program. The standardized Letter of Certification would have an increased level of importance, and there could be some streamlining on the part of FEMA, because fewer staff would be needed to evaluate exercises and to monitor the program.

There's some potential disadvantages, too. Because this program is new, the costs are unknown. The perception of self-evaluation could be, -- mean that the program could be perceived as less effective. The current resources either in the, -- in the state could be insufficient. And both FEMA and

state staff would certainly have changing roles, which could provide some growing pains. The FEMA staff in the regions would have to conduct two programs, the Delegated State Program and a Revised REP, -- traditional REP Program.

So, that's all I have. If there are any further questions?

MR. AUMAN: Thank you, Rosemary. Do we have any questions?

(Mr. Rospenda, Standing For Question)

MR. AUMAN: Yes, please.

MR. ROSPENDA: Bob Rospenda, Argonne National Laboratory. FEMA is moving towards this Partners in Preparedness Program with the states and local governments, and apparently this will require less oversight by FEMA. Due to the regulatory nature of FEMA's REP Program, does FEMA feel that there are any special policies or methods that it will have to undertake to still be able to make determinations of reasonable assurance for the public safety?

MR. BORTH: Insofar as we've examined the issue of changes to regulations or other kinds of policy-type documents, the foundation of this program is such that we believe it could enable FEMA to still provide those reasonable assurance findings to the NRC, just actually, through a little different means of gathering that data. Currently, as you all are well aware, our primary method of doing so is through exercise evaluation. And

the way this concept is presented, the exercise evaluation becomes less of a factor as far as FEMA's actual participation, and some of those other areas which have not received too much focus on in recent years, become a little more important. And those would be reviewed through the Annual Letter of Certification and supplemental verifications. So, I think we, -- as we've developed this concept, we feel that it would still enable FEMA to provide those reasonable assurance documents, or findings.

MR. AUMAN: Any other questions?

(No Verbal Response)

MR. AUMAN: In that case, we're well ahead of schedule. What we're going to do is we're going to take a break for fifteen minutes. When we come back the, -- there will be a panel member from each of the four Concept Papers up here, and we'll begin taking your comments and responses at that time. It's now 10:30, we'll begin at 10:45. There is coffee available downstairs, and, of course, the bathrooms are right across the lobby out there. Thank you.

(Whereupon, at 10:30 a.m., the meeting was recessed, to reconvene this same day at 10:50 a.m.)

MR. AUMAN: If I could ask people to start taking their seats, we'll get started with the responses then.

(Pause)

MR. AUMAN: Okay. We have panelists from each of the four Concept Papers here, -- and up front. We'll take your prepared comments now. Again, we would ask you, again, please preface your comments with your name and your affiliation. We would ask you to again, limit your comments to five minutes, but if you want to come back again, that's fine, too; we have plenty of time to listen to comments. So, time is really not an issue today. And, again, we would ask you to come up to the microphone, for the Recorder's sake, as well as your colleagues and the panelist members as well. So, we are ready to hear your comments. Who would like to start?

MR. BLACKMON: My name is Terry Blackmon. I'm the Emergency Preparedness Director for Off-Site Preparedness of Commonwealth Edison.

Com-Ed stresses that as the process proceeds it is imperative to assure that 44 CFR 350 approval is retained for all sites currently having approval. No changes to the program should invalidate or possibly challenge the existing approvals. Exercise streamlining is the area where there is most to be gained. An outcome-based process should be emphasized. Plants without 44 CFR 350 approval should be required to meet all objectives, with a finding that public health and safety can be assured. Plants with 44 CFR 350 approval should be allowed maximum flexibility and should be evaluated from the lessons learned, contribute to assurance of the public health and safety.

The focus on radiological functions can be accomplished as part of an integrated program. The Exercise Evaluation Manual should assess only those components that are unique to radiological emergency response, or have a direct impact on public health and safety. Components that are generic to all-hazards emergency preparedness need not be continually reassessed.

The partnership should be the basis for the findings of reasonable assurance of public health and safety. FEMA has chosen to evaluate exercises of a response capability. It is suggested that a review and audit of activities detailed in the Annual Letter of Certification be used as the basis for ongoing claims of reasonable assurance. The basis for withdrawal of 44 CFR 350 approval should be made on an overall program assessment, not on the result of a single exercise.

Delegated State should be delayed for consideration until more effective priorities can be implemented.

Most of the issues revolving around the REP Program can be resolved with very basic changes. First, either make the 44 CFR 350 approval process meaningful, or eliminate the process.

Second, evaluation of the program should be based on the sixteen criteria of the NuReg-0654. Findings that have no direct basis in the NuReg criteria should be presented as improvements only.

Third, develop an in-depth evaluator certification program. The evaluator certification program should focus on observation skills. The certification program should concentrate on the sixteen criteria and not on the detailed checklist. Evaluators should be taught to focus heavily on local plan and procedure reviews in preparation for evaluation.

Four, allow maximum flexibility in the selection of exercise objectives. Objectives should be selected based on what is to be learned from the exercise, rather than demonstration of known capabilities.

The following are a variety of events that can provide positive learning experiences without resulting in negative training: fast-breaking scenario, unusual event or alert, with a release; site emergency, with release, or no release, and recovery; general emergency with protective action recommendations and no release; plant events combined with earthquakes and tornados where off-site has the greater damage. A key evaluation criterion should be, as the lesson's learned, improve the capability to provide or assure public health and safety.

Fifth, eliminate fifteen minute criteria as part of the evaluations. In the Statements of Consideration, Part 50, dated August 19, 1980, the NRC stated, *"Moreover, there may never be an accident requiring use of the fifteen minute notification capabilities"*. The industry has no problem with the fifteen

minute criteria as a requirement of capability, it is concerned about its application to the exercise evaluation process. When the fifteen minute criteria is applied to non- fastbreaking scenarios, it generates confusion of a realistic time frame, it generates errors of public information, which could be more detrimental than any delay in notification, and adds to negative training. It is clear from the Statements of Consideration that the fifteen minute capability should have limited application in the exercise evaluation process.

Six, require all applicable objectives to be demonstrated at some site within the six year cycle. A few counties and a number of states are impacted by more than one plan. These entities should have the flexibility to select as many or as few objectives as needed to meet the above-stated requirement. If the decision-making process works at one site, there's no reason why the same process should not work at another site.

Seven, eliminate objectives that are not unique to REP. The requirement for a medical capability is not a REP- unique requirement. With the concerns for nuclear terrorism, the program for handling radiologically contaminated injured should be broader based.

Eight, Review REP-14 and 15 against NuReg-0654, FEMA/REP-1 criteria. For example, the items listed on the Performance Review 3.2, page 3-1 of FEMA/REP-15 has no valid

reference in the NuReg.

Nine, combine exercise objectives. That's already been discussed.

Technical advice to FEMA, -- Item Eleven. I'm sorry, Item Ten. Eliminate as many points of review as it is reasonable to do. Many of the points of review are unnecessary. For example, Point of Review 1.5 has no basis in NuReg. The issue is whether or not personnel can be notified, not how; mobilized, not how.

Eleven, technical advice to FEMA should come from the appropriate federal agencies, not from contractors. FEMA should revitalize the Regional Assistance Committees and eliminate reliance on contractors. Contractors have a self-serving motivation behind their advice and evaluations. The individuals provided by RAC members for evaluators, should not be contractors to those agencies. Fully using the RAC is another way for federal responders to remain familiar with how states, locals and utilities will respond. Federal response will be enhanced by the knowledged gained and maintained through observation by Regional Assistance Committee members. Thank you.

MR. AUMAN: Thank you.

(Mr. Seebart, Standing For Question)

MR. AUMAN: Please, sir.

MR. SEEBART: Good morning. My name is Dave Seebart, and I'm representing Wisconsin Public Service Corporation. I've

been the Emergency Preparedness Supervisor at the Kewaunee Nuclear Power Plant since 1981. I'd like to thank you for the opportunity to speak this morning and recognize you for your ability to recognize a need for change, for the effort you've put into it so far, and for taking on the challenges that, -- yet to be faced.

I've followed this process since the beginning and the one thing that's most gratifying to me has been the general unity of purpose between state, county and utilities. Yes, there are variations across the nation. There are variations in capability and knowledge level, but we seem to come back to the same common themes. And I think you've identified and are addressing those, that should be commended.

In my view, there are about three important areas that need to be focused on. First of all, is, we need a joint FEMA and NRC effort on an exercise of realism, realism of scenarios. Up to this point, we have used very conservative doses estimate programs to generate dose numbers in the public for emergency response. Many times those are very high compared to the real release that could be generated from a plant. And often, and very typically, when field teams bring their more realistic numbers in for assessment, they're lower than those projections. So, that the high numbers are what are heard first, and that's what the public is exposed to. We need to bring radiological release values into reason.

We do have the capability plant by plant, conditions to declare emergencies where that would force an evacuation without radiological numbers. We've done that in the past and we've demonstrated that evacuation capability. We have the means, without putting up excessively high numbers. Realistic radiological monitoring and assessment can be done and demonstrated with lower radiological numbers. As a matter of fact, we feel it's more difficult to demonstrate that there is no radiological threat, than there is a major threat. So, ability to show that capability is there with realistic release numbers.

Compliance-based exercises cause conflict, and gives us false sense of response times for exercises, in that our operators are licensed and personally accountable for health and safety of the public. Their goal is to put the plant in a safe shutdown condition. They're held personally responsible for doing that, and that is their goal. Many times in compliance-based exercises we have to hold up that process to allow the state and counties to demonstrate their objectives. This is not good training for our operators, nor is it a realistic portrayal of how the off-site agencies would have to respond. Slow responses, slow building in emergency situations; I fully believe in my experience, that the operators will prevent a health threat to the public, put the plant in a safe condition, safe shutdown, and prevent the need for general emergency in a slow-moving

event. That doesn't mean that fastbreaking, Act of God situation can't happen. In that case, we have to be ready to deal with it in the time frame that it dictates, not us. We do have in place predesignated protective action recommendations for the fastbreaking event. We should concentrate our time on our confidence level in those protective action guidelines, and in the confidence in implementing in a timely manner for that fastbreaking event.

Secondly, looking at the skill and professionalism of hundreds of volunteers in the state and county levels, -- yes, there's a lot of response, -- emergency response professionals who participate, but, there are also hundreds of volunteers who take part. Over the last decade and a half, these people have been increasing their skill and knowledge to a very high level. They are stakeholders in their communities. They want to do a good job. They want to be able to say honestly, *"We can protect our friends and neighbors in our community"*. And many times, in the area of self-assessment, they're more critical of themselves than any outside observer could be. So, I think we have the potential where we can, to use self-assessment, allow the people to monitor themselves and audit their results to ensure that that general level of preparedness is there.

The third area is our ability to implement self-assessment. I hope you realize the overpowering benefit of self-assessment that's out there for positive change. Knowledgeable

assessors coming in from a regional basis of peers, bring their knowledge to the community they talk to, just as you have in the past. The opposite side of that is the innovation they see by observation came back to their communities. So, there is a win-win. Yes, they can assess and help evaluate, they bring their knowledge, but anything they see, they take back to their own communities and implement. So, the benefits are far reaching to set up a mechanism to allow them to do it.

Finally, the point I'd like to make is, the FEMA/NRC partnership, we need to exist in this whole review process and change. For years the utility, -- when we conduct an exercise it's viewed as a test, a test of our capabilities. And our operators take that seriously. A test to them, is do everything right, do it as promptly and effectively as possible, put the plant in safe shutdown condition and not have the release of radioactive material. State and counties, because of compliance-based exercises have had to say, *"Please, give us an hour or an hour and a half, to show this function"*. It makes it very difficult to generate a realistic scenario when we have those two conflicting views.

So, as you deliberate over your findings and look for ways and methodologies, my request to you is that the FEMA/NRC partnership is as strong as possible, so that our ability to generate scenarios and exercise situations that the plant and the off-site agencies can respond to, are as realistic as possible,

and we prepare ourself for the real event. Thank you very much.

MR. AUMAN: Thank you. Next person.

MR. YAROSZ: Good morning. My name is Billy Yarosz. I'm a Supervisor of Emergency Planning at the Power Station at Illinois Power Company. I would like to echo a couple of things that Dave said. I think you should be commended for the undertaking that you're doing here today, as far as the FEMA review is concerned. I'd also, -- a lot of my comments you've already addressed, you've already commented on those, and some of my colleagues have already commented on, but I think it should be emphasized.

We agree that FEMA should be looking at the reasonable assurance of the health and safety of the general public as an objective. But we feel that in the past it's been a one-way street, and then looking strictly at the exercise to make that determination. We feel it should be a two-step process, and it should be compliance with the regulation, as well as performance of the emergency response organization. Compliance with the regulations can be done through the (350) approval process, through plan revisions, through the Annual Letter of Certification of certification, which I think you're already doing, through audits and inspections and through self-assessments.

As far as the performance of the emergency response organization goes, that will still be through the graded

exercises performed every other year. However, we feel that a lot of the non-radiological aspects should be taken out of those whenever possible. Also, the use of less evaluators would be beneficial, however, those evaluators should be better trained, and they should be results-oriented, instead of compliance-oriented. And, also, the use of a realistic or more probable events, emphasizing on past weaknesses that were identified by maybe a more previous exercise where we learned how to address these.

And as far as Concept Paper goes, we feel that there are really only two issues here, and that two of the Concept Papers can be combined into one. The Exercise Streamlining and the REP versus the all-hazard, really is one issue. And then the Partnership and Delegated States, is really another issue, therefore, the two issues will be addressed. We feel that the Exercise Streamlining should be the one that is focused on first, and then after any actions or determinations from that, then you should focus again on the Partnership and the REP.

Finally, as far as the exercise deficiencies go, we feel that there are some objectives that can be combined or consolidated. We could remove some of the non-radiological objectives. The medical objectives probably shouldn't be as frequent as every exercise. And, again, the use of better screening evaluators, again, looking at results; did the participants adequately protect the health and safety of the

public? And that's what we're looking at. Thank you.

MR. AUMAN: Thank you. Next person.

MS. DREY: My name is Kay Drey. I'm from St. Louis. I'm not clear what the purpose of today's public meeting is. First, I would like to ask a question. Can somebody tell me the date when the public notice of the San Francisco meeting and this St. Louis meeting, and the D.C. meeting tomorrow, when the notice appeared in the Federal Register?

MR. AUMAN: Does somebody have a copy of it?

MS. MARTIN: November 18th.

MR. AUMAN: I'm sorry?

MS. MARTIN: November 18th.

MR. AUMAN: November 18th.

MS. DREY: November 18th. I know that the advisory went out the day after Thanksgiving, which was just this past Friday. Most citizens do not have access to the Federal Register, we don't read it on a regular basis. It's hardly, I think, an adequate notice for a public hearing, especially if there are only three in the whole country.

The St. Louis organization, with which I am associated, the Coalition for the Environment, was an intervenor in the Calloway Nuclear Power Plant licensing procedure before the NRC, and has been a demonstrated stakeholder for twenty-five years, yet the Coalition For The Environment was not notified of today's meeting. I am also a Board member of the Nuclear Information and

Resource Service in Washington, D.C., and that group also was not informed of these hearings, including the one tomorrow. I learned of today's meeting only because one of our public radio reporters phoned me two days ago, when he, too, first learned of this meeting. And it seems to me, -- it looks like most of the people in the audience today seem to be here from various midwest electric utility companies. I assume they were notified longer ago than just two days. But, I just want to make the point that I think the citizen input, -- there's no way to hope to have citizen input, if the citizens aren't informed of a meeting.

I would also like to say that I hope the Federal Emergency Management Agency, FEMA, will maintain an active presence in the oversight of the emergency response plans at our commercial nuclear power plants. I know that FEMA found some deficiencies at the Union Electric drill in August, and as the plants get older and the equipment is older, and a lot, -- I think a lot more, -- the hazard increases. And I think we need more federal supervision and oversight, not less.

I think that volunteers can do a great deal, but I think they are limited, and even the professional people have some, I think, misconceptions about radiation. When we were concerned here in St. Louis, about the Three-Mile Island fuel that was shipped through St. Louis, about two dozen shipments by train, and I realize you're talking just about power plants that are in one place, we, -- I spoke with a lot of people. At that

time we were responsible as County officials here in St. Louis County, for radioactive accidents. And I was given their Fire Services Radiological Emergency Response Manual, and on page 28 it says,

> *"The exclusion zone is where the radioactive materials are located, or suspected to be located. The buffer zone is a work area which may become contaminated as the operations continue"*.

Operations, meaning for evacuation.

> *"The cold zone is outside the operational area and is definitely non-contaminated. These zones may be delineated in a number of ways. The most satisfactory method is to use barriers. However, if rope is not immediately available, an imaginary line can be used, as long as everyone understands what it is and what it means."*

And I have experiences also at that time when I called our County Emergency Management Office and, -- to find, -- I just asked a simple question, *"What does the Geiger counter have to read for you to make a decision that you will evacuate an area?"* And he said, *"Well, we'll have to wait until the health physicist gets to the scene"*. So, I think we are, -- I think as citizens we have a lot of legitimate questions and concerns. I have worked

with the Nuclear Regulatory Commission for a long time, and with the Department of Energy, and I feel they're trying to do a good job, but I also feel that as citizens maybe we have a little more comfort in an agency that's not promoting nuclear facilities. If there were no nuclear engines, there would be no nuclear engineers, and so forth. So, you are all responsible for emergency management, and I like the comfort of having this additional layer. Thank you.

MR. AUMAN: Thank you very much. Any other comments?

(No Verbal Response)

MR. AUMAN: No? If we're done, I'll turn it back over to Anne Martin. Yes, maybe we do have another one.

MR. BLACKMON: A couple of additional comments. As you were talking today and going through this, one of the things that strikes me, if I were FEMA, looking at a bigger picture and a longer term, FEMA needs to look at the total exercise program. You know, some of our counties are involved with has-been exercises and drills, SESA (phonetic), a number of different requirements. They come together on a, -- sometimes very close together, and taxes the same resources over and over again. And I think one of the things that you need to look at long term, beyond the REP Strategic Review, is a total exercise program for state and counties, so that you can integrate all the exercising and drills that's done and make sure that you've got across the board capability, regardless of what

the disaster is. And that that's being evaluated and drilled in a most efficient manner. Because right now you've got different programs that butt heads with one another for the same scheduling, -- I mean, for the same resources at times. And I think that's a bigger picture to look than just this program.

I just came from an exercise yesterday at Zion (phonetic); one thing that really stood out to me was just to emphasize the, -- what I believe is some of the uselessness of the check lists that are currently being used. The evaluator went over, near the end of the exercise, and asked about the emergency power source for the State Emergency Operation Center. And since they, -- this is the second exercise in the same year, I'm sure that question was asked at the previous exercise. The building hasn't changed. It hasn't changed for a number of years. So, unless you have some change like that, you don't need to ask some of those basic questions over and over again. And I think those items are very easily deleted and shouldn't take nothing away from the health and safety of the public just because the process becomes a little more efficient.

MR. AUMAN: Thank you. Do you have his name and affiliation?

THE COURT REPORTER: (No verbal response.)

MR. AUMAN: I'm sorry?

THE COURT REPORTER: No, I was going to, --

MR. AUMAN: I'm sorry. Could I have your name and

affiliation again, for our recorder. Just make sure we capture that.

MR. BLACKMON: Terry Blackmon, Commonwealth Edison.

MR. AUMAN: Thanks. Any other last thoughts?

(No Verbal Response)

MR. AUMAN: No? Anne.

MS. MARTIN: Thank you, Rick. And I'd like to thank each one of you for joining us today. I would like to note that the Federal Register notice of the meeting was given on November the 18th. Also, on our FEMA home page, our FEMA web site, the REP home page; if you're not familiar with that, there's a large sign as you came into the building, giving you the specific address. In fact, -- no, it's not in this slide, but it is on the, -- at the front door, giving the specific web site address. This announcement was there at the same time that the arrangements were made for the meeting, and all of the comments from this meeting, as I mentioned earlier, from all the public meetings, will be posted on the web site.

In closing, I would like to thank John Miller and his staff, the staff of Region 7, for hosting this meeting, for making all of the arrangements. I also would like to show appreciation to our RAC Chairs, Woodie Curtis, Larry Earp and Bob Bissell, for the midwest territory here. I would also ask if you have not signed in, we have sign-in sheets on the table at the back of the room, so if you would, please, be sure and give us

your name and affiliation. Are you raising your hand?

COMMENT FROM THE FLOOR: Yes. Will we be able to get copies of the attendance sign-in sheets, -- the attendance list?

MS. MARTIN: We can probably put that on a web site, since we don't have specific addresses. Yes ma'am.

COMMENT FROM THE FLOOR: Are we also going to be able to get a copy of the slides? They went so fast I couldn't write fast enough.

MS. MARTIN: Okay. And for the audience, let me repeat. Andrea, your question was, copies of the sign-in sheets, and your question is, --

COMMENT FROM THE FLOOR: Copy of the slides.

MS. MARTIN: -- copy of the slides. I beg your pardon. They are going to be on the web site.

COMMENT FROM THE FLOOR: They already are.

MS. MARTIN: They already are on the web site, but we did not make any provisions to make hard copies. But they are at the FEMA web site, and, again, that address, -- I can, -- you can see one of our staff here may give you the specific http address.

COMMENT FROM THE FLOOR: It's on the catalogue.

MS. MARTIN: And it's on the easel at the front door. Any other questions?

(No Verbal Response)

MS. MARTIN: Would the Steering Committee go towards

the exit sign there (indicating).

(Parties Comply)

MS. MARTIN: Last opportunity. Also, while the Steering Committee is moving towards the door, I will point out this viewgraph is saying that today or this week, these public meetings are not the last opportunity to make comments. If you would, if you have any written comments, if you have an opportunity to think more about what you heard today and would like to make some written comments on them, send written comments to this address (indicating). We're asking that they come in before January the 1st, because of the, -- as you may have noted in the overview briefing, our intent is to propose preliminary recommendations in March. So, if you get them in before January, we'll have an opportunity to consider those in our first meeting for preliminary recommendations. Okay. Phil, without my glasses I'm going to attempt this, but if you have your address and, -- or if you have your paper and pencil handy it's http//www.fema.gov/pte/rep, R-E-P. And that is where all the proceedings of all the meetings will be posted. Also, any new dates, any new events, they are posted as they happen. So, that is the most direct and fastest route to get information.

I would also note, that we learned, -- this is a, -- I won't say I'm computer illiterate, but, I'm not very knowledgeable, and I understand that a peculiarity of the web site is that if you check it today and you see certain items, and

you check it tomorrow, it may look like it has not changed, but in actuality it has. There is refresh function, so it's not readily apparent if there has been changes from week to week. So, if you would, please, be sure to go through whatever process is noted, that refresh function, to get the very latest news.

On that, again, I thank you for being with us today, and that concludes our public meeting for the midwest territories. Thank you.

(Whereupon, at 11:30 a.m., the meeting was concluded.)

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State of Missouri)
) SS.
City of St. Louis)

I, DEBORAH CARTER, a Notary Public in and for the State of Missouri, duly commissioned, qualified and authorized to administer oaths and to certify public hearings and other legal proceedings, do hereby certify that the foregoing is a correct transcript from the electronic sound recording of the proceedings in the matter of the REP Program Strategic Review, At-Large Stakeholders Meeting, held December 4, 1997, for the Federal Emergency Management Agency; Preparedness, Training and Exercises Division.

I further certify that I am not an employee of the Federal Emergency Management Agency nor related to nor interested in any of the parties to whom this hearing is addressed.

Witness my hand and notarial seal at St. Louis, Missouri, this _____ day of _____, 1997.

My Commission expires March 21, 1999

_____

Notary Public in and for the
State of Missouri

I-N-D-E-X

FEDERAL EMERGENCY MANAGEMENT AGENCY
PREPAREDNESS, TRAINING AND EXERCISES DIVISION

REP PROGRAM STRATEGIC REVIEW

AT-LARGE STAKEHOLDERS MEETING

ST. LOUIS, MISSOURI
DECEMBER 4, 1997

HOSTS

John Miller
FEMA Regional Director - Region 7

* * *

D. Anne Martin
FEMA Deputy Director - Exercise Division

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TRANSCRIPT OF PROCEEDINGS

FEDERAL EMERGENCY MANAGEMENT AGENCY

REP PROGRAM STRATEGIC REVIEW)
AT-LARGE STAKEHOLDERS MEETING,)
WASHINGTON, D.C.)

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REP PROGRAM STRATEGIC REVIEW)
AT-LARGE STAKEHOLDERS MEETING,)
WASHINGTON, D.C.)

Auditorium, Building 46
University of the District
of Columbia
4200 Connecticut Avenue, N.W.
Washington, D.C.

Friday,
December 5, 1997

The meeting was held, pursuant to notice, at 9:08 a.m.

APPEARANCES:

RITA CALVAN, Director
FEMA, Region III

D. ANNE MARTIN, Chair
Strategic Review Steering Committee

RICK AUMAN, Facilitator

ATTENDEES:

MARY LYNNE MILLER
FALK KANTOR
TOM ESSIG
SHARON STOFFEL
ROSEMARY HOGAN
BOB BISSELL
BILL MC NUTT
MARCUS WYCHE
STANLEY MC INTOSH
LARRY ROBERTSON
STEVE BORTH
JAN LAMB
WOODIE CURTIS

ALAN NELSON
BILL RENTZ
JIM HARDEMAN
ATTENDEES (CONT.):

RON GRAHAM
GEORGE URQUHART
TINA KUHR
SANDRA PAICE
ROBERT HOLDEN
MICHAEL J. SHARON
NICK DE PIERRO
JOHN LITTON
ERNESTINE M. KUHR
ANDY SIMPSON
JOELLE KEY
ROSS FRENDENBERG
JOHN PERRY
DOUGLAS P. BOGGS
DR. MARK FINDLAY
ART WARREN
MIKE NAWOJ
PAT MULLIGAN
VIC KELLEY
CHARLIE MILLER
RON FRAAS
MIKE SCHOPPMAN
SCOTT SAUNDERS
JOHN GIBLE

P R O C E E D I N G S

MS. CALVAN: Good morning, everyone. It's my privilege to welcome you to this public comment period on our Radiological Emergency Preparedness Program Strategic Review. My name is Rita Calvan and I'm Regional Director for FEMA's Region III, which includes the states of Delaware, Pennsylvania, Maryland, Virginia, West Virginia and the District of Columbia.

This is a great time to be reviewing this program. The program is almost 20 years old. For those of us who work in the field with the REP program a lot, we know that there's a lot we could do to streamline it, so I think it's very timely that we're doing this at this time.

This meeting, of course, is not just for FEMA Region III. It's for the entire Eastern Territory of the United States. It includes FEMA Regions I through IV. I'm representing my colleagues in the other FEMA regions, Jeff Bean from Region I in Boston, Lynn Canton from Region II in New York and John Copenhaver, who's the Regional Director in Region IV in Atlanta. I'm sorry that none of them are able to be here today, but it's my privilege to be able to represent them.

We were doing some back of the envelope

calculations a few minutes ago and we figured we have 24 states in the Eastern Territory, almost half the country, and we figured we do have, combining all of our plants, the highest number of plants. If you divide the country up into the three territories that we traditionally divide the country up in, in FEMA, we have a total of 37 plants, I believe.

Region IV, the Atlanta region, has the highest number of plants in the country. I believe FEMA Region V, which has its office in Chicago, has the second highest number, and in Region III, we have the third highest number, with a total of nine plants. Eight plants, actually, but nine sites.

Whenever I think about the REP program, I always like to think that those of us who live and work in Philadelphia, of course, especially when we come to Washington, we like t think about how we were really first. Everybody, you know, thinks of Washington as the nation's capital, but really, Philadelphia, as you know, is really where it all began. We're very sensitive to that, particularly with our office a block from Independence Hall.

Unfortunately in Pennsylvania, we also have the dubious distinction of being where the REP program all

began, because, of course, that's where the event at Three Mile Island took place in 1979 and that is what spawned the REP program.

ON a personal level, I feel very at home with this program. There's a lot of attention, of course, to FEMA's disaster response and recovery programs. The REP program tends to be a little bit forgotten, because there's so much drama associated with the disaster program. But, in fact, I feel very comfortable with the REP program, because I came from a regulatory background before I came to FEMA. I spent more than ten years at EPA. So, this is, of course, a regulatory program and I feel very comfortable with it.

This is your meeting, those of you who are here from states, perhaps local governments, utilities. It's your meeting. You are stakeholders in this process. We want to hear from you and we hope you'll express your views and your concerns very candidly.

I would like to take just a moment to compliment the team which consists of FEMA people and our sister agency, the Nuclear Regulatory Commission. They have been on a whirlwind tour of the country. This week, they have been to San Francisco for our first public meeting. They were in St. Louis yesterday and now in Washington today,

doing the Western, Central and Eastern territories. I know it's been very stressful for them. They've held these meetings and gotten on a plane and moved to the next location. So, I just want to thank them and compliment them for their hard work and their endurance.

It's been so tough that Jan Lamb of our staff has decided to retire at the end of the year. So, welcome to the meeting. We look forward to hearing your view.

At this time, I'd like to introduce Anne Martin. Anne is the Deputy Director of our Exercises Division in FEMA's Preparedness Training and Exercises Directorate at FEMA Headquarters.

MS. MARTIN: Thank you, Director Calvan, and thank you for those kind comments about the committee. Indeed, they have had a whirlwind week.

I'd like to give you an overview of the strategic review of the REP program before we go into the concept papers. As Rita mentioned, the FEMA responsibility for the program began in 1979, when FEMA took the lead for off site radiological emergency response planning. The mission, of course, then, as it is now and remains the same, is protection of public health and assuring public safety around commercial nuclear power plants.

Of course, programs grow, they mature. Fifteen years later, between the period of February of 1994 through roughly 1996, NEMA, the National Emergency Management Association, issued several resolutions from their committees, suggesting possible changes to the REP programs. Also, during that same period, 1994 to 1997, attendees at the national REP conference annual meetings also made a number of suggestions about the REP program. In May of 1995, the Nuclear Energy Institute issued a white paper.

Well, a significant change was made to the program in February of 1995, when the exercise reporting was streamlined with what is known as the SERF, the Standard Exercise Report Format. But, change was still on the horizon. Taking into account the comments that I've mentioned from the National REP Conference, from NEMA, from the NEI white paper, as well as the conferences that were held over the years by our FEMA regions, all of those comments were taken into account by the Agency. In June of 1996, Director Witt directed the first comprehensive REP program review, 17 years after the program began.

Of course, rather than taking the comments from NEMA or National REP Conference or NEI by itself, it just made sense that there be a complete comprehensive review.

A couple of things were happening on the national stage that also assisted this process. One was, of course, the Administration's announcement of the National Performance Review, which was a look at the public service rendered by the federal government to revalidate programs and procedures, particularly those that had been in being for a number of years, such as the REP program. Of course, the Government Performance and Results Act directed that the government would take an in depth look at performance criteria and at the results, and also provided a model. That model I will be talking about in just a couple of seconds, because that's a model that we utilized for this strategic review.

In preparing for the review, there were two acts that had significance to the review and were taken into account. One was the Federal Advisory Committee Act. That, of course, is administered by the General Services Administration and says that non-governmental entities, in order to participate in any policy making with the government have to be deemed a Federal Advisory Committee, and that's an 18 to 24 month process, with a number of steps and a number of criteria to be completed.

Also is the Unfunded Mandates Reform Act that was

signed by President Clinton in March of 1995. The Unfunded Mandates Act directed the federal government to seek out state, local and tribal view s on programs and also directed agencies to consult with a wide variety of state, local and tribal officials. And, in addition, directed that these consultations should take place as early as possible when changes are being considered.

So, that brings us to the Strategic Review Initiative itself and the model that we use for that. As I mentioned, we use the model set forth in the Government Performance and Results Act, and that directs that first, before beginning any activity, a needs assessment be made. Of course, to an extent that we had been assisted with the needs assessment by the resolutions and the comments that had come in from the various organizations, the stakeholders in the program.

That model also directs that an in depth review be made of the objectives of the program. The objectives, of course, come directly from the agency vision, which says, an informed public, protecting their families, homes, work places, communities and livelihoods from the impact of any disaster and of course, that remains the same with our REP program protection of public health and public safety.

The strategies that we developed for this review were, of course, Development Strategic Review Steering Committee Outreach. Part of that outreach is the reason that we're here today. Of course, the model also directs that agencies identify their stakeholders. Of course, that's anyone with a stake in the program or an interest in the program. Our stakeholders are here today and we identified them as public citizens, state governments, local governments, tribal governments, power plants, other federal departments and agencies. Anyone with an interest in the REP program.

Now, in planning for this initiative or this strategic review, we looked at the typical planning model, which you see here on the overhead, the linear planning model. Wherein, so often we develop a plan and have some input into it, develop a draft document and after comments, go directly into implementation. That's a model that we have often used in the past.

But, for this strategic review, we went to the accordion planning model that you see on the overhead. I think perhaps everyone is close enough to see the small circles as well as the blocks. The circles indicate the Strategic Review Steering Committee and the blocks indicate

the stakeholders. So, on your far left, the Strategic Review Steering Committee met, conducted deliberations and then reached out to state and local government. It comes back to the Strategic Review Steering Committee.

Then, the second outreach was to our federal partners at a federal forum. Again, those comments come into the Strategic Review Steering Committee and then the third outreach is to the public, and that is why we're here today and we were in San Francisco and St. Louis earlier in the week. Only at that point do we look at drafting a document which would again go out to the public via The Federal Register, and after that, result in recommendations and finally, implementation of a program.

Well, as I mentioned with the model indicating a needs assessment, again, in July of 1996, The Federal Register held the announcement that this strategic review would be held, asked anyone having any interest in the program or any comments to send them to us in FEMA. This federal notice was held open for 120 comment period. During that 120 days, we received 60 respondents with 178 specific comments and this next transparency, I'll give you a second to look at it, that indicates the major topic areas that were sent in with the comments. As you can see, exercises

received the greatest number of comments.

Taking these comments, along with the NEMA resolutions, the NEI white paper, the National REP Conference suggestions, as well as all of the papers that had come in from the various REP Conferences held in their regions, the Steering Committee deliberated with all of these comments and four principal concepts emerged from these papers and comments. They are the delegated state, exercise streamlining, partnership in the REP program and the radiological aspects of REP. It's those concepts that we will be going through in some detail today and give you also an opportunity to pose questions on them.

Now, you may have a question about who has been comprising this Steering Committee and is taking a look at all of these comments. The Steering Committee was chosen very carefully to represent the full spectrum of REP experience and to represent a full spectrum across the nation, so that we get a cross section of experience. Nuclear Regulatory Commission is represented on the Steering Committee, both the Emergency Preparedness side, the Response side, preparedness training in exercises, regional management is represented on the committee. The RAC Chairs, the Regional Assistance Committee Chairs, several RAC

Chairs, as well as REP policy and REP training, and we also have a technical advisor from FEMA, the Program Office, and a legal technical advisor.

I'd like to take this opportunity to mention our RAC Chairs for this territory. Dan McElhinney from Region I could not be with us today because of another commitment, but we do have Stan McIntosh of Region II, Janet Lamb, Region III and Larry Robertson of Region IV, so if you'd just take a moment and stand in place, we're very pleased that our RAC Chairs could be with us at this territorial meeting.

We had the comments in hand, the papers in hand, and in January of 1997, the strategic review actually began the deliberations and looking at all the comments. Also, in January of 1997, another activity was initiated by FEMA, and that was a RACAC, or Regional Assistance Committee Chairs Advisory Committee. The RAC's had been in existence for a number of years, but the chairs really did not have a forum to come together and discuss consistency across regions or discuss various issues.

So, in January of 1997, the RACAC was chartered. In July of 1997, the RACAC reviewed the concept papers that had been developed by the Steering Committee. This was

actually the first full review of the concept papers. Then, in September of 1997, the concept papers were taken to the Government Stakeholders Meeting, which was held in Kansas City, and I think a number of you in the room today may have been designated Government Stakeholders and attended that meeting.

In November of 1997, we took the concept papers to our federal sister agencies at what we call the Federal Forum held in Dallas and this month in December, we are having our At-Large public meetings. That's where the concept papers today are presented to anyone who has an interest in them.

In January, we hope to have what we call our FEMA Stakeholders Meeting and that is all of the program representatives, all of our program people, both in headquarters and the regions, attend a meeting to review the concept papers.

Where do we go from today? We give you an opportunity to review the concept papers, to ask questions, to make your statements and then the Steering Committee will consider all of those. I would mention at this point that the proceedings from today will be recorded and all of those comments will be posted on the REP home page.

Taking all of those into consideration, the Steering Committee plans to submit proposed recommendations to the FEMA director in March. Those recommendations or any changes to those recommendations will be published in The Federal Register. There will be a comment period. We plan to have as long as possible. We probably will not be able to do 120 days, but it will be a significant comment period and then in June, we plan to make actual program recommendations to the FEMA director and after that, of course, with the implementation by the FEMA regions and headquarters.

That concludes the overview briefing. I'd like to introduce now Mr. Rick Auman, who will take us through the rest of the agenda. Rick is with Human Technologies, Inc. and will be acting as our facilitator for today's meeting. Rick?

MR. AUMAN: Good morning. I'll be the moderator for today's meeting. I'd like to spend just a couple of minutes talking about the format for today's meeting and some ground rules for that meeting.

This morning, as you can tell from your agenda, you'll see we're going to present each of the four concept papers in the order listed on your agenda there. We would

ask that during these presentations, you hold questions until the end of the presentation, because there will be time to ask any questions you have about the particular concept paper at the end of each period. So, if you would hold your questions and then afterwards, we'll ask you to come down and ask any questions you might have.

If you do have any questions about the particular concept paper that's been presented, we'd ask you to come to one of the two microphones down at the front here. Please preface your comments with your name and your affiliation. That's for the sake of our reporter, who is sitting surreptitiously in the back over here, taking everything down, but please preface with that and then ask your questions about that particular concept paper. If there are people at both microphones, I'll just indicate which microphone we'll take the question from.

Our schedule calls for us to begin prepared comments in response to the concept papers at 1:30 this afternoon. If we move right along and time permits, we'll start those comments earlier, if that is possible, but if we're on schedule at 1:30, please just come down to the microphones and we'll have panelists up here to respond to anything that you'd like responses to and we'll take your

comments at that time, as well.

We would ask that each individual limit your comments to five minutes. I will give you a one minute mark when you have one minute left. I would ask at that point you summarize your comments and then allow for the next person to come down and offer their comments, as well.

There will probably be sufficient opportunity for you to come back and offer more comments, if you would like, and we would certainly appreciate that, but we would like to get through everybody's comments first, before we start taking others, as well.

We do have two microphones down in front. They are both on. We'll alternate from side to side, so it doesn't matter which microphone you go to. We'll just go from one to the other as we work our way through there. If it takes that long, we'll take our last comment at 3:55 this afternoon and we'll end the meeting at 4 p.m. If we're done before that, then so be it, we're done before that.

Unless there are any questions about our format today, or the ground rules, we'll get started. Okay.

The first paper that will be presented this morning is the partnership paper and that will be presented by Sharon Stoffel and Mary Lynne Miller.

MS. MILLER: Good morning. My name is Mary Lynne Miller. I'm with FEMA Region IV in Atlanta, Georgia. On the panel with me today Stanley McINtosh from FEMA Region II in New York is my very able slide flipper and Sharon Stoffel from FEMA Region I in Boston will join me, as well.

Anne, I think, gave you a very good overview as far as the role of the committee and basically how we approached trying to form up the basic ideas we were given by all of you into concept papers. As we started going through this, it became very clear that a lot of the issues centered on a change of environment in terms of partnership between the various players in the REP program. So, we're presenting this paper to you first, in that it basically overarches the other concept papers in both theme and content.

I guess the basic issue and just to put it in a very short description is, should the role traditionally assumed by FEMA be modified from principally that as an evaluator of state and local ability to implement emergency response plans to one more defined as a partnership in a broader context, and to include more open communication in that relationship.

Towards that end, as we were kind of bringing

things together, things seemed to group into four basic areas and so we'll present the paper to you in those four basic topic areas this morning. I will present the first two sections, those being performance and policy. My colleague, Sharon Stoffel, will present the final two topics, technical assistance and federal exercise participation.

I really must point out that each of these particular components of the partnership paper are rather independent and therefore, all of them should be looked at somewhat separately, although there is certainly a common theme. Any of them could be adopted either with or without the others, so it's not a package deal. If you could kind of look at those independently as you form your opinions on them.

I think I'm coming down with a cold from this schedule. Beginning first with the performance section, many commentors proposed that federal, state, local and tribal government entities all have the same goal of protecting health and safety of the public. So, many comments received focused on providing more flexibility to state and local governments and generally reducing federal oversight, given that common goal.

Many commentors relayed that this type of changed environment and empowerment seemed to be particularly applicable to REP in terms of where the program is, in terms of its evolution. A couple of factors played into that.

First, over the years, the REP program has developed an excellent definition of the capability that a state, local and tribal government must possess in order to protect the public. So, that definition of capability is fairly well defined. Over these same years, I guess the second factor is the maturity that the program has achieved and the level of experience that has been gained by those entities and the record of performance. In terms of performing those roles, it was felt that these warrant a higher degree of control over actual program execution, given the experience of the program.

Therefore, I think Anne gave you a good outline of the Government Performance Results Act and where it plays into the federal government at this point. That was recommended as a model in terms of a process that could be used in terms of a specific strategic planning model for REP. This rather busy slide, going from the third bullet down, defines what could e looked at as a strategic planning process for REP, if that was undertaken. I won't bore you.

I know most of you are familiar with strategic planning in terms of detailed concept, but basically, of course, it involves setting goals that support the mission, and generally those are done at a fairly global level, probably on a national level. Then moving to results focused objectives and generally performance measures are at that level as well, to give a better definition of when you've actually achieved what you want to.

Then, moving from there to the outcome level, where you're actually in a state or local unique fashion, choosing how to accomplish those. In other words, the upper level is fairly well defined, but as you move into the outcome level, that's where there's flexibility of state and local governments to achieve outcomes in different ways, depending on what the situation is. So, that's where the flexibility could come in.

At the bottom of the slide for those of you who are not aware of it, on my right and your left is PPA, which are Performance Partnership Agreements. These are the strategic planning agreements that FEMA has with the various state governments in a non-disaster context. They are a strategic planning document. They are not a funding document. They're executed with the governor, generally, of

each state. I guess I should clarify one question that has come up in terms of REP funding. Of course, now the funding goes directly from utilities to state and local governments. This paper does not recommend a change in that funding process for it to come through FEMA. The PPA aspect is a strategic planning document, not a funding document.

But, basically, the paper points out that the use of the PPA, in fact, many states do it already in order to get a more holistic look at their response capability, but that's not really the critical path. The question is, from a strategic planning document, that would be one way to approach it. But, I guess our question to you is, is that necessary for the REP program at this point, or is the program well defined enough at this point to move forward without kind of going back to a goal setting process?

The second section, this reads B, and I'm sure you've all read these papers very carefully, there is actually a Section B in the paper that reads evaluation. We had included an evaluation component in this paper, because there were a lot of partnership themes that emerged with that. But, it seemed as we worked through the stakeholder process, we were making people repeat themselves, because there is an exercise streamlining paper, as well.

So, we consolidated that piece of partnership into the other papers. So, actually, the policy reads C in the document, but the text has been removed.

Basically, the policy section in the paper focuses on the need for greater stakeholder involvement in the development of ongoing policy. We're moving towards that, I think, as you see from the form today and from other activities that have happened in the recent past and generally, the methods recommended for those were workshops and conferences among other means of getting better input into policy, rather than having it just rolled out in that linear planning model that Anne described.

Many of the commentors complimented on the SERF format, Standard Evaluation Report Format development used in Kansas City and the comments that we received to date on this process, as the stakeholder involvement and strategic review have been generally favorable on that increased participation.

You know, I think the advantages are fairly straightforward. You obviously get increased ownership if you're part of the process, improved consistency because there's more input, and certainly that's an advantage in a lot of respects. I think we have to recognize that

consistency is good, but there's also needed differences. But, it gives you more of a global input into policy, and obviously, broader access to technical expertise, because there's a lot of expertise out there and we would be remiss in not looking at that in developing policy.

It should be recognized, however, that it does take, it's a more lengthy process to include more stakeholder input. We've certainly seen that with this process that the committee has been involved in, but certainly you're getting a better product at the end, if you go through that process, but it must be recognized that it doesn't happen as quickly if you broaden it out, but certainly more positive.

Those are the first two sections. I'll now turn it over to Sharon, who cover the second two and then we'd be glad to take your questions.

MS. STOFFEL: Thank you, Mary. Good morning. I'll be speaking with you about technical assistance, the third portion of the paper and I think that I'd like to clarify our use of the words technical assistance. The context in which we're using it in a concept paper is a broader context than purely radiological assistance. It would also extend to programmatic and planning assistance.

The comments were provided suggesting that FEMA shift its emphasis from a role of prescriptive evaluation to one of a technical assistance provider to states, tribal nations and local governments. This would further the partnership relationship. It would put FEMA in the role of facilitator-educator, rather than evaluator, and hopefully in the long run, customer service would be improved as a result.

The examples of technical assistance that are provided in the paper are indicated on the overhead. The first two areas, plan improvement and training assistance, would have FEMA playing a greater role in providing assistance with emergency preparedness plans and with training, with the states, local governments and tribal nations.

FEMA would continue or expand its role in courtesy evaluations. Often during rehearsals, we have the opportunity to provide feedback while the players are participating in a rehearsal, and this has been felt to be very beneficial. So, the expansion of that was recommended as a possible way to enhance technical assistance.

Radiological monitoring. FEMA could work with other federal agencies to identify key radiological

monitoring and assessment capabilities, determine where more effort is needed and work to accomplish that effort. Use of the Internet was suggested and the specific recommendation there was to establish a web site for technical assistance. Emphasis on corrective actions versus grading is noted in the paper. It would allow us to correct issues during drills or during exercises, rather than having a final grade be the ultimate outcome of the exercise effort. It's felt that that would greatly improve the learning experience during the exercise or drill.

FEMA could take a more active role with our partners in the Emergency Alert System. Similarly, with special needs data assistance, FEMA could assist in obtaining the data and working through some of the Privacy Act issues that are involved.

Other areas specifically that were noted included conduct of technical assistance conferences and more on site visits.

The last area for the paper has to do with Federal Exercise Participation. If there were more extensive federal agency participation in exercises, it would give our partners improved knowledge of federal plans and federal resources that would be brought to bear, should an incident

occur. It would afford us the opportunity to exercise the relationship between the Federal Radiological Emergency Response Plan and the Federal Response Plan.

An important consideration in increasing federal exercise participation is a commitment of resources that would be necessary to permit federal agencies to participate at a greater level and that would require a great deal of attention. But, this is the last of the four areas of the partnership paper. Thank you.

MR. AUMAN: Thanks, Sharon. Okay, Sharon, Mary Lynne and Stanley are ready for questions, if you have any.

If there are no questions, then the second paper will be presented. Thank you all. The second paper will be on the radiological focus. That will be presented by Falk Kantor, Tom Essig, Bill McNutt and Marcus Wyche.

MR. KANTOR: Thanks, Rick. Good morning. My name is Falk Kantor. I'm with the Nuclear Regulatory Commission and I'm a member of the Strategic Review Steering Committee. I'll be assisted this morning in the presentation of the paper on radiological focus by Tom Essig of the NRC and Bill McNutt of FEMA and also Marcus Wyche of FEMA.

If we look back a little bit at where we were and see how we got to where we are today as far as emergency

planning, there was some guidance issued in the mid-70's, NUREG 75/111 -- somebody might be familiar with it -- which proposed or recommended that emergency plans should be developed at a state level. There should be a general state emergency plan and then a Radiological Emergency Response Plan, a RERP should be developed, with supporting operating procedures.

That approach was reinforced in the Revised Emergency Planning Regulations issued shortly after Three Mile Island, which again emphasized a stand alone radiological emergency response plan supported by implementing procedures.

But, over the years, especially as the emergency management agencies matured in other areas, there's been a movement towards an all hazards approach to emergency planning. In fact, if you look at FEMA's current mission statement and goals, one of the goals is to establish, in concert with FEMA's partners, a national emergency management system that is comprehensive, risk based and all hazards in approach.

In response to The Federal Register notice, we did get quite a few comments recommending that REP be included in the all hazards approach to emergency planning. As we

began to examine that closer, it became apparent that the inclusion of REP in the all hazards approach to emergency planning, a related issue was identified and suggested by some of the comments concerning whether the efforts of state and local governments, as well as FEMA, should be focused on those activities and REP unique to radiological emergencies and less on the non-radiological aspects common to all emergencies.

So, that really is the issue in this paper here. So, the committee began by looking at the background. We reviewed the planning standards in 0654 and the regulations, evaluation criteria, NUREG 0654. We examined the emergency plan objectives and points of review in REP 14 and 15 and also examined the regulatory basis for REP to determine if there are any impediments to moving in this direction, and also took a very preliminary view of perhaps what changes in guidance might be necessary if we did move in this direction.

We wanted to be cognizant of and be reminded of that under the current program, all emergency planning standards must be met and the resulting program must continue to provide reasonable assurance. However, how this would be accomplished may differ from what is already in

place.

In looking at the all hazards approach, we were aware and reviewed some of the state plans. Some of the states have moved quite a bit in this direction in their planning. Some states, not quite as far. But, in Kansas City, we got pretty good feedback from the state and local representatives about how they have incorporated REP to a certain extent in their all hazards planning. In fact, FEMA has issued a guide on this, State and Local Guide 101, that was issued in 1996. The format suggested there is a basic plan, an emergency operations plan, with functional annexes for each of the core functions of emergency response, such as direction and control, communications and so forth.

Then, hazard specific appendices, such as a nuclear power plant accident. That's the format suggested in the FEMA guide. It's not a requirement, it's just a recommendation.

In our review of the planning standards in 0654, it soon became apparent that they really don't lend themselves to dividing them into radiological and non-radiological aspects. It became apparent it was more useful to look at the exercise objectives in FEMA REP 14, the demonstration criteria, and under that, the points of

review.

We took, you might say, a first cut at these demonstration objectives and you'll find some overlap here with the paper that will be given later on in exercise streamlining, but we identified a couple small amounts that could be considered non-radiological in approach. Even these are argumentative, and there was another larger group of objectives that could be considered to be all hazards, but contained radiological components. You can see these listed here on this view graph.

The final category was a list of objectives that appeared to be primarily radiological in nature. Again, you can see some of these objectives here listed on the view graph.

State and local governments have been demonstrating the ability to meet these objectives in exercises and they're comfortable in that approach. So, the question is, is it practical to separate the objectives demonstration criteria and points of review that are considered radiological, and if so, which ones? However, emphasizing the radiological aspects of REP does not eliminate the non-radiological aspects from concern. The non-radiological aspects activities would still need to be

verified as adequate, even if demonstrated in an all hazard framework.

As an example, some of the objectives we looked at -- communications, for example -- it appears to be generic in function -- all emergency responses require communications to a certain extent or degree, but if you look at this one closer, there is a radiological aspect to it. Emergency response facilities need to communicate to other facilities and to field monitoring teams, protective action decisions for radiological releases need to be formulated and issued. So, there is a radiological component to the communications objective.

If you even look at the one on staffing, that one is quite often given as an example of something that is non-radiological in nature, because every emergency, you're required to staff in response. But, under the guidance in REP 14, I think it's every six years, the incoming shift needs to be briefed on the radiological aspects of the events. So, even that staffing objective has a radiological component to it.

Next, if you look at the concept of an integrated exercise as described in NRC and FEMA regulations, the integrated exercise truly is an integrated exercise. The

best emergency planning, best emergency response, is when all parties are involved. The licensee and state and local organizations that are involved in the emergency plan together need to demonstrate their capability. The regulations also talk about demonstrating the major observable portions of the on site, off site emergency plans, and of course, the regulations require that an exercise be conducted on a biennial, once every two year, basis.

So, in order to conduct a truly integrated exercise, it's necessary to include some of these generic, non-radiological aspects. The so-called glue of an emergency response, emergency exercise, is found in these non-radiological activities. So, it may be difficult to separate those out.

However, we have developed a possible alternative approach that would allow FEMA to reach its reasonable assurance finding and Tom Essig is going to go over that approach with you now.

MR. ESSIG: First, we have a flow chart which depicts the possible alternatives. On the left, we have, and I'll go into each of these points in a little bit more detail, but I just wanted to show you up front conceptually

what we're talking about.

We have discrete drills which, of course, we do now, readiness appraisals, which sounds like a new concept, but really embraces a lot of existing methodology, exercise credit, referring to credit given for real events, that type of thing, and then expanded use of the annual letter certification. These would feed across the page to the right into a full participation exercise. That is, they would be done separately, but at some point, full participation exercise, perhaps a less frequent exercise, all of which would then feed over to the right to be part of the overall adequacy finding of reasonable assurance.

In terms of discrete drills, as I said, this is something that we do currently and that we have field monitoring teams can demonstrate expertise separately and apart from a full scale exercise. Emergency workers demonstrating the use of dosimetry. People with directional responsibilities can show that they understand the technical information. That can be done separately and apart from the major or the full scale exercise and the other, the discrete drills, the emergency medical and that's often done currently as a discrete effort. Then, health physics drills would be the other one that we had identified as possibly a

discrete activity.

I mentioned earlier about readiness appraisals. We've used it in quotes there, because it is somewhat of a new term in a REP context, but it really consists of what you see there below, which is walk-throughs, which are done to some extent, already. Inspections, although not on the FEMA side of the house, so much, but certainly on the NRC side of the house, where we're quite familiar with inspections. Inventory and roster reviews, audits of resources and verifying that the information listed in the letters of agreement is current. All those could form activities which we're calling a readiness appraisal.

Other possible alternative approaches, we could have the non-radiological objectives that Falk was mentioning earlier, could be demonstrated in all hazards exercises, with results then coordinated with the REP evaluation. Then, as was mentioned also, expanding the exercise credit for real emergencies or for the non-radiological response activities.

Then, the state assessment of plans for fairness could be reported in an expanded annual letter of certification. That would comprise the other alternative approach. In doing this, of course, we realize that

focusing on the radiological aspects of REP may require changes in the current REP program, such as a change in the conduct and frequency of the full scale exercise.

I'd like to conclude this part of the presentation with some issues to ponder. First, can FEMA make its adequacy findings based on drills and other preparedness activities combine with less frequent full scale participative exercises, and if so, how? Can the focus on the radiological aspects of REP be made without affecting the exercise process? Lastly, how and with what frequency does one make judgements on reasonable assurance under these alternatives that we're talking about here? Would more focus on radiological functions and less focus on generic functions fragment a coordinated response? That is, would it be able to pull itself together without the glue that Falk mentioned earlier? Does the emphasis on the radiological aspects of REP and less on the generic aspects merit further consideration? That concludes our part of the presentation, except that Bill McNutt has a few comments to offer.

MR. MC NUTT: -- which had already been mentioned is not new, except for the direction and control. That would be a new concept in the discrete drills. The

readiness assessments, walk throughs, review of rosters and letters of agreement. FEMA has a document called the Capabilities Assessment for Readiness, which could assist state and local government in doing readiness assessment. To these two activities, you add the expanded credit for performing non-radiological exercises or drills, responding to a real emergency, and then you add the use of the annual letter of certification, where state governments perform annual periodic requirements which are required under our current guidance, and just submit a letter to the region that these activities have been completed.

So, you tie these all together in a package and then you step back and say, well, what have we accomplished? Perhaps we haven't accomplished much unless we look at the exercise frequency, now biennial, and we might say, well, let's give some relaxation and make it a once every three or perhaps once every four years. Of course, that would be tied in how frequently does FEMA have to make judgements on the adequacy of plans and preparedness, in order to provide a reasonable assurance.

This is the essence of the concept and I think it provides a lessening of the evaluator intensity. If you have any questions, please feel free to --

MR. AUMAN: Any questions? Yes?

MR. NELSON: Alan Nelson from NEI. I was wondering, for a clarification in point, have you developed a matrix or an analysis of which of the points that you put on will affect the regulations, which means, does this regulation change as we look at it and have people comment, or do any of these changes have the force and effect that would take further looking at?

This comment, for clarification, really applies to all the concepts. How does it affect the legal, how does it affect the guidance and what changes need to be made? That way, the matrix would understand the actual changes.

MR. MC NUTT: Well, any change to the exercise frequency would require a regulatory procedure.

MR. KANTOR: Yes, that would be a required change in the regulations, but as far as the exercise objectives, that sort of thing, we really haven't done a matrix, but that would not involve a change in regulations. That would be a change in guidance, correct.

MR. NELSON: What I think Bill and Falk are saying is that if you decide on a program where both sides, state and local, have done an exemplary performance and now they could exercise every third year, then that would create a

rule change, require a rule change?

MR. KANTOR: If we change the frequency of the exercise, yes, that would require a rule change.

MR. NELSON: How about any of the other objectives that you're looking at, I mean, as far as how does that affect 5047? How does that affect Appendix E? How would it affect any of the 10 CFR, you know, 44,350? Would that have any impact on any of these recommendations? I'm talking about a broader matrix that looks at everyone of those points made in determining at the outset what cause and effect it might have on the regulations and the guidance activities? It just seems like that needs to be packaged somehow.

MR. KANTOR: Well, eventually, we would have to, yes, take a close look at what the impact would be. But, at this point, we've already looked, as we have indicated. I also would mention, as I mentioned earlier, several states have moved in the direction of all hazards planning and they've included REP in there, and they've been able to accomplish that under the regulatory framework we have today.

MR. MC NUTT: Well, Al, in terms of the 44 CFR 350 approvals, the regulations don't prescribe how FEMA makes

these judgements on the adequacy of planned preparedness. We have, you know, over the years established this mechanism, so if we could change it, we would obviously change it to The Federal Register notices and other meetings of our stakeholders.

MR. KANTOR: And, also, conceivably, it could affect the memorandum of understanding between NRC and FEMA, too. That's another thing.

MR. NELSON: That's an absolute point. So, for thinking, though, once you have developed your final thought process, taking all these comments, that analysis would need to be looked at, cause and effect of regulations, in developing long term policy and limitation. The reason I ask for that qualification up front is, when you look at this in a broad sense, there are a lot of things, like you said, could be implemented on a regional basis without the long, protracted redevelopment of guides, reopening, you know, rules and regulations. There are a great deal of efficiencies that could be put in place without modifying the rules and regulations, and that's why I think the matrix is truly needed. Because, in the short, there should be short term goals of implementation, as well as long term.

MR. ESSIG: Yes, I think you made a good point,

Alan. I would just add that the committee for not only this concept paper but for all the others, is open to proposing changes to either FEMA's rules or NRC rules, if the changes that were to be implemented need to be done in that fashion, so we're open to that as a possibility.

MR. AUMAN: Any other questions? If not, I'll thank our panelists.

Our third concept paper is on exercise streamlining and will be presented by Janet Lamb, Bob Bissell and Woodie Curtis.

MS. LAMB: Good morning, everyone. I'm Janet Lamb from FEMA Region III in Philadelphia. I have with me Woodie Curtis from Region V in Chicago and Bob Bissell from Region VII in Kansas City.

I would like to say that in regards to Alan's comments, that none of these concepts have reached the stage where decisions have been made as to what is going to be implemented, and it has always been a part of our plan that we will look in depth at all the regulations, once decisions are made. We're still gathering your comments at this time.

As far as the exercise streamlining paper is concerned, it was pretty evident from the beginning that out of all the comments, 81 involved directly exercises and the

exercise evaluation process. During our deliberations, we separated all of these exercise issues into various groupings, and came up with a basic eight areas that we could look at as a means to continue to provide reasonable assurance, but meet your needs to look at a more streamlined exercise process.

The eight groupings that we came up with, Bob is going to discuss with you in a minute, and they involve things like expanding the credit policy, focusing on results oriented evaluation process and, as an attempt to provide you with a sample of what an evaluation tool would look like, we have come up with a sample and attached it to our exercise streamlining paper.

That is not the only way we could look at exercise evaluation, but it is one tool that could be used. So, to get on with it, Bob will discuss the eight areas that we feel could be used to affirm that reasonable assurance to protect the health and safety of our citizens does indeed exist. I hope to see all of you on Monday at our three region scheduling meeting.

MR. BISSELL: Thanks, Janet. As Janet has indicated, we did consolidate all the comments down to eight separate approaches to streamline the exercise evaluation

process. Some of the concepts that I'll address today, this morning, you've heard in the previous papers in a little more detail, but since they did relate, we have included them in the exercise evaluation streamlining process.

The first approach is the Results Oriented Exercise Evaluation Process. Currently, the exercise evaluation process consists of 33 objectives which were introduced in September of 1991. These are a sizeable number of points of review, which must be successfully demonstrated to meet the requirements of each objective. This process is very structured, as you all know, and leaves very little latitude for the evaluator.

The proposal is what we have termed the Results Oriented Exercise Evaluation Process. It has a reduced number of objectives. The checklist format is gone and the objectives are much more broad in nature. This allows the players to complete an activity without following a specific checklist.

For example, if an emergency response decision was made to perform a certain emergency response function and that decision did not necessarily follow the plans as far as responsibilities and procedures, it would not be an exercise issue. Players would have much more latitude to reach the

desired outcome. Evaluators would concentrate on the outcome of the exercise participation and not the means to complete the task.

The second approach was an increased focus on the radiological aspects of REP, which was discussed in quite a bit of detail earlier. Evaluators should concentrate more on the radiological objectives and less on the non-radiological objectives. Those non-radiological objectives could be demonstrated and/or observed by other means, such as credit for real events, other non-REP exercises and through staff assistance visits.

As you know, some of the objectives and points of review do focus on response procedures and capabilities which apply to any type of emergencies such as fires, flooding, tornadoes and other natural and technological hazards.

In addition, these objectives are routinely conducted by emergency respondents during various non-REP disaster exercises, such as hazardous material exercises, chemical stockpile and emergency preparedness exercises and other natural disaster exercises. Credit could be granted for these actual responses and the exercise activities. Staff assistance visits could be conducted by FEMA to verify

or observe these efforts.

The third approach is a consolidation of like objectives. Similarities between objectives and repeated exercise evaluations provide evidence that several objectives can be combined without adversely affecting the evaluation process. This would eliminate the redundancy and the points of review and shorten the evaluation process. This would possibly reduce the number of evaluators and the cost of the exercise, and we have included just some of the objectives which we felt could be combined for this process.

The fourth approach was to update the REP policy and guidance. The commentors felt that FEMA has done a poor job in updating REP policy and guidance to reflect the changes in the program. Some examples would be the change to the Emergency Alert System and the issuance of the new EPA 400 Manual of Protective Action Guides. Commentors were also concerned about the manual itself. They felt it should be designed to be user friendly, and to be easily updated with page inserts.

In summary, our goal would be to create a system which could quickly adapt changes in the program and design an exercise manual which can be easily updated.

The fifth approach is the changes to the frequency

of objective demonstration. There was a lot of concern here with the types of objectives and the frequency that we required them to be demonstrated. One of the suggestions included starting the exercise at the post-emergency phase and eliminating the emergency phase. Most of the commentors felt that we put too much emphasis on the emergency phase and we've exercised that portion of it to death. They would at least like to have the option within that six year cycle to forego that pre-emergency phase, emergency phase, and concentrate on other objectives, such as the six year objective, recovery and ingestion.

Another suggestion was to reduce the frequency of some of the drills and probably the most prominent suggestion was to reduce the medical drills to a two year evaluation instead of the current yearly evaluation.

More frequent demonstration, there were a lot of comments indicating that the states and locals would at least like to have the option of demonstrating some of those ingestion recovery objectives more often that what is currently allowed.

The last item on the slide dealt with the federal agency participation. The commentors felt that the federal agency should participate more frequently, especially during

the ingestion exercises. Most felt they needed to know more about the federal roles and responsibilities as they relate to the Federal Radiological Emergency Response Plan.

The sixth approach was the out of sequence demonstrations. We currently do that now, but the commentors had indicated a desire to greatly increase that policy. They would like to see out of sequence demonstrations included for such things as nursing homes, correctional centers, radiological laboratories, ingestion field teams, traffic and access control, dose calculations, monitoring and decontamination facilities, just to mention a few.

They also indicated that they would like to possibly demonstrate the ingestion portion of an exercise out of sequence of the plume portion, possibly even demonstrate the ingestion objectives during the off year.

Another concern identified, and we lumped, included it under this approach, was the concern that FEMA does not do a very good job in providing feedback to the players during the exercise evaluation process. They would like to see more immediate and more feedback to the players immediately following and exercise or a drill. They would like us to provide more information, both the positives and

the negatives, and possible solutions.

Another item or another recommendation that was made was issue correction, and that was also discussed a little bit earlier. The suggestion was made that exercise issues be immediately corrected, as identified during the exercise. For example, if the monitoring procedures were deemed to be inappropriate, the evaluator, possibly in conjunction with the state radiological officer, could provide some on the spot training to that individual and redemonstrate that objective right there. The issue could be shown as an area requiring corrective action in the exercise report, but it would also indicate that it was corrected and no further action would be required.

Currently, issues as you know are now corrected for redemonstration up to two years later. A positive and more meaningful experience would result when questionable performance was identified and was immediately corrected instead of delaying a demonstration to a later date. Of course, this wouldn't work with all objectives. Possibly, this would work best with the out of sequence demonstrations.

The seventh approach is exercise credit. Currently, there are only really two objectives per our

guidance that qualify for exercise credit, actual credit, and that would be off hours unannounced exercises and drills. However, I believe that most regions have been somewhat flexible on this and included other objectives.

The commentors would like to greatly expand this, though. They would like to include objectives such as mobilization, facilities and equipment, direction and control, communications, media information, rumor control, just to mention a few, to be included as options for exercise credit.

The commentors also felt that FEMA should develop a standard implementation guideline that clearly identified the objectives that would qualify for exercise credit and the required documentation that they needed to submit to obtain that credit.

The last approach is sort of a consolidation of some of the previous items we've discussed, plus a few additional ones. The commentors have clearly indicated to us that they were concerned that they wanted to have alternative approaches in lieu of the formal evaluation process for some of these objectives. One of the alternatives could be staff assistance visits and FEMA could conduct personal interviews with players during these staff

assistant visits, training sessions and out of sequence drills, for example, to verify credit for objectives demonstrated during other activities, such as actual events or during other exercises.

The out of sequence is another alternative. Again, we would expand those objectives and those facilities that could be conducted out of sequence. Credit for real events, we've discussed that in some detail. We would expand those objectives and provide the criteria for those objectives, to obtain that credit.

The annual letter of certification is another alternative verification or the annual letter of certification could be expanded to include such things as monitoring equipment, maintenance and calibration, personal dosimetry operability and maintenance records, potassium iodide requirements, shelf life, communication drill results and self-assessment reports. These all could be done in lieu of exercise evaluations.

Verification of the documentation submitted in an annual letter of certification could be accomplished by staff assistance visits by FEMA.

The last item, last alternative, would be self-assessment, and basically, jurisdictions below the county

level could perform self-evaluations or assessments of those objectives they are responsible for and these demonstrations could be documented in the annual letter of certification as mentioned earlier. Those are our eight approaches and concludes our presentation.

MR. AUMAN: Any questions? Yes, please?

MR. NELSON: Alan Nelson, NEI. I had a couple of questions for clarification. I don't really see these as eight steps but more of, you know, a process, in which one, the RAC Chair could apply many of these things. My real clarification is, aren't a lot of these really implemented today, a number of these alternative approaches? I ask this of you or any of the other RAC Chairs that are here. I was just trying to get an idea of where the flexibility lies right now with the RAC Chair to implement some of these credit for real events, technical assistance, out of sequence. Is that developed during the conductive drill, if people want to do things out of sequence and package them differently than you normally would?

MS. LAMB: A lot of those approaches are being done, depending on the region you're in, and the extent of agreements established during exercise planning. But, as you are all aware, there is not necessarily consistency

across the country in how these are implemented, and that, in fact, was one of the main reasons that we asked that the RACAC or the Regional Assistance Committee Advisory Council be formed, so that we could work together to bring as much consistency as possible in how these approaches or how these issues that are already underway are being implemented across the country.

We do think, though, that many of our concepts, all of our concepts, should be used in a coordinated effort to provide reasonable assurance with the exercise, with exercise credit, with giving credit for non-radiological objectives out of sequence, and maybe during other exercises, which now there are certain objectives that we can give credit for. We feel that can be expanded.

But, we would say that it needs to be a coordinated approach in order to identify and be able to provide our regional directors with the assurance that the health and safety of assistants would be protected.

MR. BISSELL: I think the main thing is, we're going to try to expand those options. Certainly, each RAC Chair does have some flexibility to do some things, but when we talk about exercise frequency and the certain objectives or additional objectives to be allowed credit for

demonstration during actual events, those are things that are somewhat limited now and I think would just basically give much more flexibility to the state and locals and allow them at least a clear indication of what can qualify, what can't qualify, what their options are now. They would know those clearly up front instead of negotiating these things and possibly getting it done in one region and not the other.

MR. NELSON: Thank you, I appreciate that. I'd like to ask you another question about the ingestion pathway exercises. Has the committee thought about the negative training that that may allow people to pursue and think of? What I'm trying to clarify is, the worse case scenario, more frequently in the ingestion pathway, is really the unrealistic type of exercise. If we were to exercise realistic scenarios or realistic events, we might be better off prepared for real emergencies. I think you see that more in your all hazards type of exercise training.

I'm just wondering if expanding this into the ingestion pathway, I was wondering if you guys thought of that as driving continual, unrealistic focuses?

MR. BISSELL: Well, that's possible. We were just reacting from the comments and there were quite a few

comments and interest in at least allowing the states to have the option to demonstrate those objectives more frequently.

MS. LAMB: There are two definitions that we've seen in the Steering Committee for realistic demonstrations and they're totally different. The ones for those involved on site are completely different than those that involve entities off site. Some of the comments we received were that they wished to play ingestion recovery re-entry return objectives much more frequently, because they feel they've done a pretty good job on the response stage.

As far as on site goes, they would like to be able to solve the problems at the plant and end up without protective actions or creating problems that go so far out that we need to do the ingestion exercise. So, we're trying to weigh all these different types of comments in our evaluations, as well.

MR. BISSELL: The scenarios and the exercise objectives are, themselves, separate topics that will be addressed and could be improved, but I think the key word here is at least giving the state and locals the option of doing these things.

MR. NELSON: The exercise as we see it today, or

at least the licensee, is one of compliance and you've mentioned performance versus objectives. Now, couldn't the off site do drills on their own, which are really outside the scope of the compliance exercise, you know, like in the off year and things like that, and could they ask FEMA to come in and evaluate it or take a look at it or provide technical assistance? In a performance based process, one would identify weaknesses and do drills, possibly, to enhance training.

MR. BISSELL: That certainly is an option we've discussed.

MR. NELSON: Thank you.

MR. CURTIS: And, in some parts of the country, that's currently done.

MR. AUMAN: Any other questions? Yes?

MR. RENTZ: Good morning.

MS. LAMB: Good morning, Bill.

MR. RENTZ: Bill Rentz, Virginia Power. To follow up discussion in this point, you're making the point that certain states and locals like to have the option of demonstrating. They have the option of having the exercise on any day they care to. I draw a distinction between demonstrating and having something you perform evaluated.

Is there any consideration within the streamlining process for, if you streamline the objectives down to radiological specific, for example, and that rules out say, a staffing objective, Objective 30, if the state wanted FEMA to come in and evaluate Objective 30, even though it wasn't required, would FEMA have the option to do that? I would think the answer would be, of course.

MS. LAMB: All of those options are open now.

MR. RENTZ: Well, those objectives are required now.

MS. LAMB: They're required, but we do some of those out of sequence. In fact, we do them when the off site locations are looking at doing their dry runs before an exercise, we've looked at some of those objectives, Bill. It is one of the concepts that can be expanded greatly.

MR. RENTZ: I guess I'm drawing a distinction here between does everything that a state decides to demonstrate need to be evaluated? Is there a distinction between demonstration and evaluation?

MS. LAMB: One of the means of continuing to have, and this has been discussed with the Steering Committee, a coordinated, integrated exercise, is for the state to go ahead and actually respond to those objectives that are not

radiological in nature, but they may not be evaluated.

MR. CURTIS: In addition, as part of the state's training effort, they ask FEMA to come in and assist them in that manner, to assure that when the exercises do come around, that they can perform.

MR. RENTZ: Thank you.

MR. HARDEMAN: Jim Hardeman and I'm here representing the Conference of Radiation Control Program Directors today. I wanted to get at the exercise realism and kind of hit on the results oriented or results based approach here, because I think, Alan, there's a little bit of dichotomy between what your desired outcome is and what our desired outcome is.

The desired outcome, obviously, from a utility standpoint is that you be able to effectively respond to the incident with no release to the environment, you mitigate the incident properly and everything is over.

MR. AUMAN: Can I --

MR. HARDEMAN: Our desired result is that, should they not be able to achieve their desired result, that we have the capability that we can demonstrate to respond to the aftermath.

MR. AUMAN: Is there a question for the panel or

just a comment?

MR. HARDEMAN: It's kind of a clarification point here. I've heard you say and I just want to make sure that I'm hearing it, we have the capability to include any objective as frequently as we want to, or more frequently than is required, but right now, it's a money issue, because it requires additional evaluators, if we choose to have that objective evaluated.

Are you saying that we can demonstrate any objective that we want to, as frequently as we want to, and just not have an evaluator come and evaluate that? Is that what I'm hearing?

MR. BISSELL: Again, it would be up to you. If the state elected to have the option to not perform the emergency phase exercise in the fourth year of the cycle and just perform a recovery and ingestion exercise, that would be your option. We really don't have the answer to that yet. It could be formally evaluated. It may not be. Until we get all the comments together.

I see what you're saying.

MR. HARDEMAN: That's where this flexibility that we're asking for comes from. We don't want to put the utility into the position of negatively training their

staff, nor do we want to negatively train ours, but we do want to demonstrate, at least on a regional or national basis, that should this happen, that we do have the capability to respond.

MR. BISSELL: There were quite a few comments indicating that they would like to have FEMA provide informal evaluations, so that would certainly, I think, maybe tie in to where you're headed with this.

MR. HARDEMAN: Thank you.

MR. AUMAN: Is that all the questions? Thank you.

Our last paper on delegated state will be presented by Steve Borth and Rosemary Hogan.

MR. BORTH: Good morning. I'm Steve Borth. I work with FEMA in the Training Division up in the Emergency Management Institute. Assisting me is Rosemary Hogan from the NRC.

I'm going to discuss briefly this morning an overview of the delegated state paper and before getting into the details, let me just say about the name of this, the delegated state name is something that we've come up with for discussion purposes for this concept paper. The delegated state concept, if you've had an opportunity to read the paper, is proposing a different approach, a

fundamental change to the program as it exists today, and that, in a short statement, is delegating the function of evaluating exercises to state and local governments.

What we've done is attempt to bring together many of the themes from the comments at The Federal Register notice. Comments like, "FEMA places too much emphasis on one aspect of the program, and that is evaluating exercises." More partnership, more flexibility is needed, things like that. We've come up with this delegated state concept, which we believe still allows FEMA to provide the reasonable assurance findings to the NRC. It just changes the manner in which that information is obtained.

This paper, as it is in existence now, does not include a lot of the implementation details that would need to be developed.

One thing that you need to know about this concept is that the delegate state status is site specific and is sought voluntarily by a state. It's not something that's granted automatically and it's not something that FEMA would be just handing out to all sites. Three fifty approval for the plans would be one of the requirements for entry into this delegated state status. It provides baseline, we thought, for this program, and the program would increase

the importance of the annual letter of certification. In fact, it would then become the primary oversight vehicle that FEMA would use to determine the reasonable assurance findings.

Again, one of the primary points of this is there would be non-federal evaluation of drills and exercises and followed up by what we call supplemental verification, if necessary, and I'll discuss that a little bit later.

We've outlined a proposed recommended application process in the paper and that would require a letter from the governor or his or her designee that the state which seeks this delegated site status. It would include commitments to follow 0654 requirements. It would include a description of the state's plan for evaluating exercises. It would include the plan for correcting any issues which were developed out of the exercise and it would also, most importantly, include some kind of statement, we think, that coordination has taken place between the state and locals and that everyone is in agreement that this delegated state status is something they desire.

Once again, the state and locals would conduct and evaluate the exercises on their own. The program would include a lot of use of the annual letter of certification

and a standard format would be required for all the delegated states and this could include the information that's already required in the guidance memo which talks about the annual letter of certification. It's called PR-1. It would include the exercise report, any corrective actions that have been taken, and FEMA would be placing more emphasis in this delegated state program one plan updates, and looking at that side of things a little bit more in detail.

So, review of the annual letter of certification from FEMA's viewpoint becomes very critical. It would, of course, have to be transmitted as it is now, and FEMA would rate all the categories of information provided in the letter of certification in one of three ways. Whether it's acceptable, acceptable with recommendations for improvement or unacceptable. We'd be looking at the total picture to determine reasonable assurance or continuing reasonable assurance.

After examining the ALC, one of three reasonable assurance findings would be made and this is different than what currently exists. Currently, as we understand it, it's yes or no, reasonable assurance exists. We've added a mid ground here. Reasonable assurance exists, but the program

needs improvement.

In delegating the evaluation function, the states and locals would have to use the FEMA endorsed evaluation methodology, whatever that might be, after this whole process. Evaluators would need to be trained. There would be state, local and perhaps other evaluators, whatever the state would propose and have approved by FEMA. If necessary, and the state requests, FEMA might be able to supplement on the state evaluation team and provide other federal agency representatives, as well, for their technical expertise in evaluation.

This program would also incorporate any kind of revised credit policy that's developed and was discussed by the previous paper, exercise streamlining discussed that quite a bit. If necessary, FEMA could go out and examine specific portions of the state's program, called the supplemental verification. I think one of the previous papers called it readiness appraisal, something like that, beyond the annual letter of certification, if problem areas continue to exist.

Frequency of these kinds of things could be based on performance. Good performers would have less frequent supplemental verifications in their program. Performers

that continue to have problems might have their program evaluated or verified a little more frequently.

One of the big issues that we think might be connected to this concept is a financial issue. Since the state and locals now under this concept would have the responsibility of evaluating those exercises, that poses an additional resource issue. So, we thought, what are the options for funding? FEMA might pass through some funding somehow. Maybe the utilities would help fund the program. Maybe the states would fund it on their own, and perhaps some other combination or some other creative financing approach could be used.

Since this is such a change in the way things are done today, we thought it might be best to, if this concept proceeds, to identify some volunteers or pilot states and perhaps phase this kind of concept in. We realize it's probably not something that all sites or states would seek and maybe some of these other concepts would be done first, exercise streamlining, those kinds of things could be done first and then phase this concept in over time, if that's what is decided.

Since not all sites or states would probably seek this status, what about the non-delegated states? Well, we

haven't given as much thought to that, but what we've outlined here is that FEMA would continue to evaluate those states and those locals, using any kind of evaluation tool in the process that develops after the strategic review. There would probably continue to be a negotiated extent of play and an annual letter of certification would still be required of those sites.

A number of advantages we felt to this approach, to this concept, is that many of the comments from The Federal Register notice say there was no real benefit to getting this 350 approval. Well, if you tie delegated state status into requirements for the 350 approval, then there's some tangible benefit.

Increased flexibility to schedule exercises, to determine what you demonstrate during exercises and how you correct the problems, and we felt that might provide an increased ownership, as well, could be less costly in that you're not having a bunch of federal evaluators come in. There would be a standardized annual letter of certification, and it would allow FEMA and other federal agencies to refocus their efforts in this program away from the biennial training exercise to reviewing plans of technical assistance or program assistance, workshops,

training and those kinds of things, and a big one would be exercise participation, as well.

A few disadvantages, we've listed. Certainly a perception that self-evaluation could be less objective than an outside third party coming in and evaluating an exercise. Additional resources required at the state to implement this program, certainly an impact on FEMA and state and local staff. If one side of the house loses this responsibility and the other side of the house picks it up at the state and local level, so some kind of impact there on job responsibilities and training effort.

In fact, there most likely would be a dual or parallel program, the non-delegated states and the delegated states, and that would be a more difficult job in administering the REP program, rather than just having just one program across the entire country for all sites.

Needless to say, as discussion earlier, some changes to regulations might be required and that's a lengthy process.

So, that's an overview of the delegated state paper. Thank you.

MR. AUMAN: We realize you probably have comments and points you'd like to make about this particular one, but

we would ask if you have any questions at this point about the delegated state concept, we'll take those now?

MR. GRAHAM: Yes, Ron Graham, USDA. Steve, this delegation is going to be for all objectives, or are they going to divide them into plume versus ingestion?

MR. BORTH: The way the paper is described and the concept described at this point, we haven't looked specifically at any objectives. It's across the board the way it's described right now, all exercise objectives.

MR. GRAHAM: It seems to be, if you go for certain objectives, there could be a reduced participation on some of the federal agencies.

MR. BORTH: Well, that's why I said, in the state's application process to become a delegated state or even as the exercises go on and planning the exercises, the state may, under this concept, request FEMA and perhaps other federal agencies, to come in and assist them in evaluation. We're not ruling that out and we're hoping that your agency, in particular, USDA and others, would remain involved in this aspect.

MR. GRAHAM: We don't want to back out. We'd like to get further involved in it, instead of allowing, I guess, the system to allow the states to back us out of it.

MR. BORTH: Well, the concept as it is now is that it would be the state's call.

MR. AUMAN: Over here, George?

MR. URQUHART: Thank you. This may not be quite as loud as the others, but anyway, George Urquhart from the Commonwealth of Virginia. We did at the Kansas City, one of the meetings, decide that or advocated that Virginia, the Commonwealth, might be real considerate of being a delegated state. Obviously, I see that there are significant concerns and issues that involve that.

I think Steve made the point when he started out in his presentation today that this is clearly a fundamental shift and it's a fundamental change. I specifically make that -- and I think that's interesting for us in this millennial or in this time, that we begin to think outside our normal tradition of doing business in this regard.

Clearly, I see the dual approach and there are some communities, if delegated stays successful, then a component or constituent services and resources need to be maintained within the federal family so they can evaluate those other communities that may not be a delegated state.

MR. AUMAN: Is there a question, George, or is this a comment?

MR. URQUHART: Well, in a sense, yes. The question that I had had to do with more importantly, the resources that locals or states might to enlist or have. As Ron has just pointed out -- this would be more of a comment toward the paper and issue here -- that there is no move on the part of any of the delegated states, at least not from Virginia's standpoint, to exempt or any of the federal family from coming in or being a part of this community when we evaluate.

But, I think all that we're saying is here we have released a body of knowledge, a body of information, that's, to some extent, and I want to make sure that this point is coming here, to some extent is maintained within the bowels of a federal family. I don't think in these times that that is quite true. And, I don't think that is necessarily a protection of or should not be viewed as a protection of our livelihood or things like that.

MR. AUMAN: Okay.

MR. URQUHART: I just want to make sure that point is clearly made with regard to information we have. The joint publications and the guidance we have, with the intelligence in our community of consultants, engineers and state level personnel, can be replicated, and is replicated,

and not just retained in a federal family. Those are the points I wanted to raise and of course I'll have an opportunity later on. I wanted to talk about reasonable assurance finding, where is it risk based and so on. Thank you.

MR. AUMAN: Okay. Question?

MS. KUHR: Yes, Tina Kuhr with Duke Energy. I guess I want a basic question, because the delegated state concept is based on first the state having 350 approval and I'm just trying to understand the difference between a finding of reasonable assurance and a 350 approval of a plan. I guess I haven't been in emergency planning as long as some people, and our plans were all approved, and I believe even our state plans have received 350 approval before I came into the group, so I wasn't involved in that process. I guess I don't understand the difference or maybe somebody could explain?

MR. BORTH: Your question, again, is the difference between a 350 approval versus reasonable assurance?

MS. KUHR: Correct.

MR. BORTH: In 350 approval, my understanding is that 350 approval of a plan's preparedness equates to

reasonable assurance that the public safety can, in FEMA's view and will, in the NRC's view, be protected, and every other year, then, that is reaffirmed by an exercise which is conducted without any deficiencies, or if there are deficiencies, those deficiencies are corrected within 120 days.

So, reasonable assurance is a continuing thing.

MR. NELSON: Alan Nelson, NEI. But, you can still have reasonable assurance and not have a 350?

MR. BORTH: That's correct. There are 12 sites currently that do not have 350 approval and have been operating and they have what's called an interim finding.

MR. NELSON: So, why would a mandatory 350 be required?

MR. BORTH: Well, several of the comments at least to The Federal Register notice was that why get a 350? The 350 process has no tangible benefits. Seeing that comment, we thought, let's take that into consideration and hinge this delegated state status on having 350 approval.

MR. AUMAN: Next?

MS. PAICE: Hi, Steve, Sandra Paice. You talked about a pilot program for possibly doing these delegated states. I'm curious, if you're looking at something like

that, can you give me some specifics how long, what type of application, do they contact you? Do we have to provide certain information? Do you have to have certain amount of plants? That type of thing, could you give us maybe a little bit? Has it gone that far, or is this the tip of the iceberg?

MS. HOGAN: No, I think you hit on it just now. It's not gone that far. One of the points we made earlier was that implementation details have not been developed. This is a concept at this point and in Anne's presentation, she also provided a slide that said in the larger time frame, that these proposed recommendations would go to Director Witt. Details would come out much later.

So, the details of the application process are outlined in here possibly, in the paper, but certainly nothing has been developed.

MS. PAICE: So, we would be more at the implementation phase when something like this would happen and not so much in the planning phase of it?

MS. HOGAN: That's true, and this is a concept. This is not a plan or a program yet. It's a concept.

MR. BORTH: Yes, if something like this were to happen. It's quite possible that after these series of

stakeholder meetings, that this concept goes away. It certainly, by our reading so far, has not received overwhelming support, yet there are a few that seem to, appear to like the idea, even without the details.

MS. HOGAN: Of course, during the pilot phase, any of those states that are participating would be providing input into the good points and the bad points, so that if it were a program that was being implemented across the board, further details would come out much later.

MR. NELSON: Alan Nelson, NEI. So, what you're saying is, if a state wanted to do the pilot, then they would be part of the planning process, to develop this paradigm shift, rather than you develop the process and look for a pilot to demonstrate it?

MS. HOGAN: That's the whole concept of this strategic review, is getting the input from the participants and the stakeholders. So, any pilot state would be a stakeholder, too.

MR. AUMAN: Any last questions? If not, I'll thank Steve and Rosemary.

We're going to take a break. We're well ahead of schedule, so when we come back from the break, we'll have four panelists, one from each of the concept papers up here,

and we'll begin taking your comments and prepared responses at that time. I have ten of now. We'll start about five after, about a 15 minute break. Thank you.

(Whereupon, a short recess was taken.)

MR. AUMAN: If you'd like to take your seats, we'll begin taking comments.

(Pause.)

MR. AUMAN: Okay, we're going to begin taking your comments and responses at this time. A couple of points before we begin. If you did not call in and specifically ask to make comments today, that's all right. You're more than welcome to offer any comments you would like to give. We found out yesterday that somebody didn't come up and offer a comment because they thought they didn't make a reservation. No reservations required. Please feel free to come to either microphone and make your comments.

Once again, we're going to enforce the five minute rule. We would ask you to limit your comments to five minutes. I'll tell you when you have one minute left. At that point, I would ask you to please summarize or conclude your comments. Again, we have plenty of time, though, and we would encourage you, if you have more that you would like to offer or more comments, please come back again.

Either microphone is fine. Please come down when you're ready and offer your name and your affiliation for the reporter and then you can begin your comments. We have four panel members up here, as well, one from each of the four concept papers that you just heard and if you have a question for them, they'll be here to answer that, as well. So, we're ready to begin. Whoever would like to come down to the microphone, please feel free.

MR. RENTZ: Good morning. My name is Bill Rentz. I'm with Virginia Power. I'm the director of emergency preparedness for Virginia Power and I've been with Virginia Power for about seven years and I've been in the emergency planning discipline, I guess you'd call it, for about 17 years.

First of all, I'd like to congratulate you for taking on the strategic review. It is not often that you see a strong customer focus coming out of a federal agency or federal agencies. I include the NRC and their participation in this regard, in order not to get in trouble later.

You have the opportunity to better your program. I think the question here we all have is, what is better? The four concept papers presented here today, in reading

them and actually my view in reading them was confirmed today and that is that the scope of many of these concepts is yet to be defined to any specific level of detail. I'm greatly encouraged to have the opportunity to talk to you for a few minutes prior to the superstructure being formed.

While the NRC has overall responsibility for emergency preparedness at a fixed nuclear site, they look to FEMA to reach the finding of reasonable assurance. FEMA has a responsibility to establish and maintain this finding.

I draw a distinction between establishing and maintaining a finding and to keep my comments brief, I'd like to just give you an analogy. I don't know that it's a very good analogy, but it's the best I could come up with. My house was built in 1984. At that time, a contractor came in and dug the footings. The building inspector showed up and inspected the footings. When the footings were poured, the building inspector came back and looked at the pourings to make sure they were adequate.

When the house was framed, the building inspector returned. Wired, the building inspector returned. Once the certificate of occupancy was issued for the house, I don't have the building inspector coming back every two years to take down plaster board to see if the wiring is still good,

to see if the footing is still good.

What I am suggesting here, I'm drawing a distinction between establishing the reasonable assurance finding and what it would take to maintain it. FEMA has selected the exercise evaluation process for the last 14 or so, 15 years, in determining or reaffirming that reasonable assurance finding.

I think once you establish it, the word reaffirmed here has been used often this morning. Rather than reaffirm, I'll use the term maintain. Certainly, it would take considerably less resources and more efficient use of resources, to be able to maintain that finding of reasonable assurance. I encourage you and invite a comment from any or all of you with respect to do you agree that maintaining the finding should take less resources and as so, do you think you'll be considering that as you further provide detail to each of the concepts?

I am greatly encouraged by each of the concepts. I think each one of the four have merit, including the last one. There's nobody that takes better care of my children than myself -- my wife might argue that point.

(Laughter.)

MR. RENTZ: But, I take on that responsibility.

That level of government primarily responsible for health and safety is the local government. I appreciate them having or being considered to have the potential opportunity to reassume that responsibility.

Prior to TMI, utilities didn't have a very good working relationship with respect to emergency response with respect to off site authorities. I think we have that today.

I think the NRC, one example to point to, I think the NRC has recognized the maturing of the emergency preparedness program within the industry. One example is the consolidation of the SALP. SALP stands for Systematic Assessment of Licensee Performance.

A number of years ago, there were seven different SALP areas. In the 1992 frame, I want to say, those SALP areas were consolidated into four and emergency preparedness was pulled in with three others in that consolidation. I think the NRC has recognized that the industry program has matured. I think the state and local programs with respect to radiological emergency response has matured tremendously.

MR. AUMAN: You have one minute.

MR. RENTZ: Thank you. I think the virtue provided by utilities working closely with state and local

governments, I think, speaks volumes, to what the results have been coming out of NRC regulations and out of FEMA regulations and out of the application of those regulations.

So, again, I strongly urge you to draw a distinction between what it took to establish that finding of reasonable assurance and what it should take to simply maintain it. Thank you.

MR. AUMAN: Thank you. Please feel free to use either microphone, by the way.

Next?

MR. NELSON: Good morning. My name is Alan Nelson. I'm senior project manager with the Nuclear Energy Institute. For the record, NEI represents about 300 companies and organizations worldwide, engaged in the beneficial uses of nuclear energy. NEI provides technical support and regulatory issues, evaluation on generic issues affecting the nuclear industry, NEI and industry interaction, develops consensus views on generic issues and communicates these views.

We have provided a number of responses and we applaud the efforts and the recognition of NEI and the industry in moving the strategic review to this point in time. We did meet as an industry group and review the

comments and suggestions that were made on the concept papers. We met at our offices on November 12, 1997, a full day session and more and reviewed the points of view that we would like to present.

I have provided Nancy Goldstein with written comments today that will elaborate on the discussion that I'm going to make now. Given the time allowed, we offer these comments and I'm going to split them in two parts, just so that there's a difference of the two. I'm going to look at the exercise evaluation focus and then come back later and talk about some program enhancements and then with some conclusions.

This process is a little awkward, because it breaks up the continuity of the presenter, so when you read the transcript, it's going to say NEI, and then someone else, and then I'm going to come back and do that, so I think that's a little bit confusing.

In regard to the exercise streamlining, we think that you should place priority on the exercise recommendations, develop an aggressive action plan and schedule for implementation. There's a lot of merit, there's a lot going on that's already been. Consistency, I think, was brought out earlier. We definitely feel that a

project matrix for this whole project needs to be developed. How it affects regulations, how it may affect guidance, what's its impact? I don't mean cost benefit impact. I mean, benefit benefit impact. What could be done early on and what would take more longer term looking at?

In the area of the exercise evaluation, we need to emphasize greater program efficiency, exercise streamlining is imperative, maximize flexibility. We think the use of the annual letter of certification can be expanded, as you had noted. It should be used as a self-assessment tool, as it is, and expanded upon that, it should be used as an alternative to some exercises.

On regard to the delegated state option, I kind of feel that that should be delayed until some of these other processes can be put in place. I applaud your creative paradigm shift in thinking. It's evolutionary, and should be applauded for that, but there are many other things that could be put in place that could create more efficiencies to benefit both FEMA, state and the industry.

Just to build on what Bill Rentz had mentioned from Virginia Power is the effect of monitoring reasonable? Sure. FEMA should continue to maintain the current level of evaluation for initial licensing exercise. But, once its

initial licensing exercise has been conducted, an operating license is issued and the role for maintaining the assurance of public health and safety should shift to one that monitors.

Implement, in another category, implement enhanced program review. In this category, allow for drills and exercise flexibility, focus on results, outcome and meeting objectives. Reallocate FEMA resources to areas of greater needs, as in the all hazards approach, where that may need, because that's where your everyday event is. If we're not prepared for those, then we will never be prepared for the nuclear.

MR. AUMAN: You have one minute.

MR. NELSON: I'll just sum up in this activity and come back and expand on a few of the other points. In addition to that, perform inspections to satisfy objectives during the exercise that you had already discussed. We encourage that.

Develop a minimum criteria for reasonable assurance and lay that out and let it be known. In conclusion of this particular point, is that we believe that you should reward good performance and look at a three or four year certification or exercise frequency. But, the

criteria for that would need to be developed. Thank you.

MR. AUMAN: Thank you.

MS. KUHR: I'm Tina Kuhr with Duke Energy Corporation. I've kind of grouped my comments along the lines of the concept paper. As far as the partnership and REP program, we believe FEMA needs to increase the federal and state partnership. They also need to allow flexibility and REP to be results oriented and focus on outcomes, no prescriptive methods.

We agree with the concept of revising REP 14 and 15 to consolidate related objectives. We are also encouraged by the trend toward allowing more self-evaluation. We believe FEMA needs to focus on preparedness and reasonable assurance, not just exercises and that there are other ways, such as assisting or doing program reviews, to assure that.

We believe there needs to be an increase in stakeholder involvement and policy setting and also an increased use of other federal agencies for technical expertise. One suggestion we would like to offer would be for FEMA to sponsor regional REP workshops, with a focus on information exchange among participants to make use of the states and counties' expertise and to allow them to share

that in that kind of forum.

We also believe that the Emergency Alert System guidance needs to be updated to reflect the changes in the system.

As far as the paper on radiological aspects of REP versus all hazards. We believe in allowing expanded credit for responses to actual emergencies and agree that there should be a standard national policy for this.

We also should look at what aspects of preparedness can be evaluated through inspection, rather than exercises and make that more of a continual process than a once every two year event.

We also see that you could have integrated exercises where you're testing all aspects of emergency response, but only evaluating under the REP program those REP specific objectives.

The delegated state concept, we weren't quite as comfortable with the amount of delegation. We think that FEMA needs to maintain some degree of oversight similar to that of the NRC, where they allow the utilities, as the programs have matured, more self-evaluation, but they still maintain an oversight of the process, such as sitting in on our critiques, to make sure that we are being self-critical.

As far as exercise streamlining, again, be results oriented. Focus evaluation resources on those areas where there have been either problems generically, if there are certain objectives that have had problems countrywide, or areas that have had previous problems at that site. That's where the resources should be focused.

We do not believe that the frequency of relocation, re-entry, return and ingestion objectives should be increased because of the low probability of these events, but we could be supportive of having two plume and one ingestion exercise and have like an ingestion only exercise in a six year cycle. We also believe that the frequency of MS-1 drills could be changed from annual to biennial. Even the NRC is recognizing with maturing of the program that our on site exercises don't need to be done annually, and I think this would be appropriate.

We also might want to look at whether we could do more separation of the on site and off site exercises. For an ingestion exercise, perhaps the utility could just serve as a control cell and not necessarily have to have negative training of our own people toward failure. So, those are the comments that I had to offer.

MR. AUMAN: Thank you.

MR. HARDEMAN: My name is Jim Hardeman and I'm the chair of the Emergency Response Planning Committee of the Conference of Radiation Control Program Directors.

First off, I want to applaud FEMA for including us in this process. I look forward to the day when the seats are arranged a little differently. When the seats are kind of arranged in a circle and we're all sitting together as equals. That kind of leads me into the partnership concept paper.

It's no surprise that as states, we strongly support the partnership concept, but we don't want to just limit it to a partnership between the states and FEMA. We want to make sure that the other members of the federal family are included and excuse me a moment -- we also want to make sure that FEMA partners with its own regional offices. We want to make sure that the members of the federal family work with us effectively. We also want to encourage through this process partnerships between states on a regional basis. These regional partnerships could be used as an effective vehicle for federal exercise play. They could be, as was pointed out by Tina just a moment ago, they could be used as effective vehicles for exchange of technical information between states. What I see as FEMA's

role in this partnership is the facilitator, to facilitate this exchange, to facilitate that exchange of information between the partners.

Also, one additional area that we see that FEMA may have a crucial role is identifying capabilities and assets, particularly in these days of increasing budget pressure, that cannot be allowed to erode or to disappear. This is not only just in the REP arena, but also in the anti-terrorism arena. Much of that work may have already been done.

This could, perhaps, be accomplished through the FRPCC, as opposed to just having it be strictly under the FEMA letterhead.

The alternative approaches that Tom Essig so clearly laid out for us, we like those. We think that those alternative approaches have a lot of merit, but I want to make sure that we focus everything that we do on real preparedness. After we've focused on preparedness, then concern ourselves with how do we demonstrate that, how do we prove that to ourselves in an exercise, that that level of preparedness really exists? We always have to focus on preparedness and not just the demonstration of that preparedness.

We view the incorporation of the REP program into an all hazards plan not as fragmenting an exercise, but we view it rather as integrating the radiological emergency preparedness function into the overall scheme of emergency preparedness. Right now, it seems that we have two programs. We have an all hazards program and then over here, we have a REP program, often with duplication of effort and we want to try to fold REP and bring REP into the fold.

Exercise streamlining, we strongly support a results oriented exercise program. That gives us the flexibility to take alternative approaches that reach the same end. But, part of that, and this goes back to the partnership, is that all of the partners need to come together to agree on what those goals and what those desired outcomes ought to be, and then we'd go off and determine in our particular situation, how do we best achieve those goals.

MR. AUMAN: You have one minute.

MR. HARDEMAN: To get a little bit detailed, we do support the production and frequency of MS-1 drills to once every two years. To answer specifically a couple of questions, I think I probably already answered them, but I

will, anyway, should FEMA's role be redefined from evaluator to partner. The short answer there is yes. Would REP be more effective by focusing more on radiological activities? Again, the answer is yes. We support, we need more federal exercise participation, some of the ideas that have been brought out here concerning maybe having ingestion only exercise once every six years, I think we could support that. But, again, I think we'd rather see those activities on a regional basis, which would maximize the benefit from our other federal assets. Thank you very much.

MR. AUMAN: Thank you. Other comments? Time for the second go around?

MR. NELSON: Alan Nelson, NEI. I was emphasizing the need to go back and look at the exercise evaluation recommendations. I spoke to you a few minutes about monitoring the reasonable assurance implement enhancement program review.

In continuation of that discussion, I'd like to talk now about consolidating the evaluation process. The guidance for evaluation of the full participation exercise should be revised to build upon the initial finding of program adequacy. Consolidation will result in a significant reduction in the evaluation process burden for

each evaluator, thus providing the basis for a targeted review and an overall reduction in the number of evaluators used during a typical exercise.

Some of the points were discrete drills, independent of exercise, could provide efficiencies. Personnel monitoring, congregate care, field team monitoring are typical ones. We feel that REP 14 and 15 should be revised to focus on radiological performance and objectives. And, the third item in consolidation is focus on preparedness, not just exercise compliance.

Looking at limiting the biennial exercise to previously identified concerns -- if you've got that benchmark, then you should be able to come back and do site specific weaknesses that have been identified, look at what industry learns from a generic point of view from the total global industry, and I understand that FEMA does keep tabulations on tracks and trends and identified weaknesses. Was it done on an annual basis or semi-annual basis? We would like to see that published in some format to identify what those weaknesses are, so we can insure, we can capture them from the industry point of view, to insure that they're built into the scenario generically nationwide.

I don't think that we've seen a -- we've seen bits

and pieces at the REP conferences and here and there about identified percentages of identified offers and etc., but I think we need to package that a little bit better.

Also, these discrete exercises or previously under this would be new procedures and new equipment would be utilized and tested under these type of drills and exercises.

In considering efficient approaches to determine reasonable assurance, we think we need to focus on determining areas that can be inspected, rather than demonstrated through exercises. Such things as alert and notification, public information, equipment and facility readiness and interview emergency response organizations, to get an understanding of their knowledge level, to insure response readiness training is effective. Just by interviewing them, you can go a long way in finding out what their knowledge level is and how they might implement it.

Another area that might be looked at as consolidating long term objectives, such as relocation, re-entry, return ingestion pathway was what was said. Do it separately and more efficiently. Again, another area where effective approach might be again is to re-look at the annual letter of certification and how that would apply and

how people can utilize that more efficiently.

I mentioned earlier, because of the potential for negative training, I encourage you not to use unrealistic scenarios. It's misleading to the public, it's misleading to the players and the responders.

Utilize real events in real time, and I know this is difficult, but it can be tried as a pilot to see how it works and see if it does meet the criteria and goals. I want to emphasize what others have said about modifying the medical drill frequency requirements. I'm not sure that we really need to look at a two year cycle, but we need to look at a performance-based process. How that works is, if you identify through self-evaluation or review that you do have a weakness in that area, then that would be trained more and drilled more frequently.

So, the time frequency is not that critical. It's the performance of the outcome of that activity that really is time critical. If you have an off site organization, I'm not just talking medical, that shows poor demonstration, normally they would do a remedial, right, and then they would heighten that performance. But, performance-based process is an ongoing process and many of the utilities use it and I advise you to look into that, how it is done and

how it is built into the program.

The recent passing of the 5054T, I believe, allows for performance based reviews and it moved it from a one year review to a two year review, and significant changes to -- this is an NRC regulation, but it's built on performance base, identifying areas of weakness which I think are critical to the program.

There are two areas, program enhancement, which really falls into the partnership and the delegated state. Specifically, we feel, as I said earlier, the delegated state initiative, while it shows a paradigm and almost ingenious look at it, we think that that should be delayed until these other levels of effort. We'd hate to see FEMA resources being dedicated to a long, drawn out process that may or may not be applicable to all.

You're more effective in using your resources, which would support the majority of the off site state, local and the industry. But, in the program enhancement recommendations, recognize the role of protecting the public health and safety is the responsibility of the state, which you already do, and local response organizations. I think some of these points were made, but I'll reiterate them just the same. Sponsor FEMA information exchange workshops. As

Jim had mentioned before me, this is a partnership program. Being involved in the program, the ability that we have to work with you during the SERF is a prime example and I think the desired outcome was met just the same.

Invite FEMA to participate in state training, utilize state expertise when developing radiological standards. There's an awful lot of expertise out there in the state. And, permit self-evaluation with maybe modified from the delegated state which permits self-evaluation with FEMA oversight could be a cross-over from the delegated state, where the state could do their own self-evaluation, but then validated and verified by FEMA. That may be a different interpretation of the full delegated state, but receiving the same goals. This way, you need less FEMA reviewers at each location, but then they again would validate the final report and the follow up items.

Again, emphasizing provide credit for real events. I really think we need to focus on preparedness rather than exercise compliance, and by having a consistent policy, that would certainly go a long way.

Use of self-evaluations, I think I've discussed that. I think in the short term, FEMA should maintain the oversight while these other programs are matured later on.

State and local evaluators provide knowledgeable base and expertise, as you're well aware. I think this probably came out, as I saw, from some of the notes that came out of the Kansas City meeting, you certainly have gotten a lot of input from the actual stakeholders, the users, and their expertise has been expressed to you.

In conclusion, the industry believes that adoption of the approaches proposed place NRC and FEMA in a leadership role and we applaud you for that, as they actively pursue reforms that would significantly improve efficiency and cost-effectiveness. This process will enhance response capabilities of the state and local jurisdictions, do a shift in the role from evaluation to one of more technical assistance, and finally, enhance the response capabilities for the use of state and local officials in the evaluation capacity.

NEI and the industry appreciates the time that you've given us. I don't know if I went beyond my five, but I appreciate that.

(Laughter.)

MR. AUMAN: Would anyone like to take a guess, yes or no?

MR. NELSON: If we can work with you in a

cooperative, full manner, we certainly would appreciate that. Thank you very much.

MR. AUMAN: Thank you, Mr. Nelson.

MS. LAMB: Thank you.

MR. AUMAN: Other comments, please?

MR. HOLDEN: Good morning, I'm Robert Holden, director of the Nuclear Waste Program for the National Congress of American Indians. We're headquartered here in Washington, D.C. We have a constituency of, responsibility for over 550 tribal governments throughout the country, but our membership comprises about 250 tribal governments at this point in time.

A few comments regarding policy, some substantive issues, and I'll be putting these in a letter at a later date, but I guess in terms of this particular meeting and its format, talk about notice for a moment. Had attempted to go to the meeting in Kansas City, but I guess we were not invited, matter of fact, told that we weren't to be invited because we were a national organization. But, the fact is, we serve this role through many agencies, in terms of looking at the responsibility of federal agencies in implementing the trust responsibility to the tribes. So, we missed an opportunity to represent those tribes who did not

have the resources to attend that meeting, and there are a number of tribes which you may be aware, are within the ten mile EPZ and the 50 mile ingestion pathways. So, they have a right to be at these sessions and they have a right to be represented and we urge this body to be mindful of those concerns, because even though they are not here, those concerns need to be addressed.

These tribes, as you are aware, are not merely stakeholders. They are super stakeholders, if anything, because of that trust responsibility. We've worked with FEMA, well, we've worked with a number of agencies in development of Indian policies, to implement these ideas and concerns of this fiduciary duty, and we're doing so with FEMA at this point in time on these aspects of Indian policy, which will incorporate the concerns of REP's strategic review.

It may be that because tribes have not been players in these activities, that they may have the benefit of not having to go with some of the states and other jurisdictions have done in terms of some of the burdens which you are in the process of streamlining. Perhaps the good news is that, with your expertise and with the work you've done, they will have the benefit of not having to

undergo some of those headaches that some people may have felt they've gone through in the past. So, we do appreciate that, but then again, we do not know.

There are some concerns regarding, I guess, issues such as this delegated state nuance, because states and tribes do not have the best of relationships. These enabling acts that states pass to become states usurped tribal jurisdiction. They took their lands through federal government participation, so many of these lands are still -- the tribal people that live there do not feel that they ever left, or that they should be passed and they still have that connection and they still are caretakers of those lands. So, that's something that you need to be mindful of, as well as the aspects of jurisdiction, the environmental quality, the fire and police protection that tribes have to exercise to insure the health and safety of their population citizens, Indian and non-Indian, as well.

So, if, you know, I'm not saying that states won't look after states, but if the past record which shows that states have not done that environmental quality, I think we might have some concern in terms of state regulatory functions in this matter.

I would propose that perhaps maybe we should have

a FEMA tribal REP strategic review meeting to look at these aspects which may not have been addressed and I'll gladly work with you to make, perhaps, a meeting of this sort come about. With that, as I said, I will put some of these comments in writing and I guess that it's just that we in the Indian country have to be careful in terms of what we relinquished and what we're supposed to be taking care of. We've been told that we have certain instructions and we have certain things to do, and we can't leave these up to trial and error, so I thank you.

MR. AUMAN: Thank you. Any other comments?

MR. SIMPSON: Andy Simpson from the Commonwealth of Pennsylvania. We've indicated in writing and also at Kansas City were very much supportive of the process that's going on and we look forward to the next stage as it continues. I think as I say, we suggested in Kansas City that the four concept papers at this point probably need to be two -- the delegated states being one, the other integrated and interacting aspects of the other three papers probably moving into one. We look forward to that.

Again, thank you for the opportunity to participate. Just a minor question as to the logistics. A couple of the speakers have mentioned there will be written

processes, written submissions. Will all of this be on the REP home page? How will we get access to the totality of what has happened here today? I hope not till we wait to get The Federal Register notice.

MR. AUMAN: I'll leave that for Anne, who is going to address that in her closing comments, but she will talk about where this information will be available to you.

Any other comments? If not, I'll thank our panelists. One administrative comment before I turn it back over to Anne. Nancy Goldstein has asked me, if you came in today and came in, perhaps, the other door and did not see the sign up sheet outside, we would ask that you do quickly on the way out. Just stop off and sign in your name and your affiliation on your way out the door. We'd appreciate it, and I'll turn it over to Anne.

MS. MARTIN: Thank you, Rick, and thank each of you for being with us today. In conclusion, I'd like to thank a couple of other people. Of course, Rita Calvan, our Region III director, for being with us today and Ihor Husar is in the audience. Ihor and his staff, particularly Nancy Goldstein and Tom Kevorkian, who are staff to the Strategic Review Steering Committee, have done all the preparatory work to making all of these meetings across country happen,

as well as all of the materials we've used, particularly Jennifer East. I don't know if Jennifer is still here. She was here earlier today. And, Megs Hepler, the director of the Exercises Division, came in. I'd like to thank him for his support and assistance in the process.

I'd also like to take this opportunity and it's the first time I have done it all week, but since this is our last public meeting for this part of the process, I'd like to publicly thank the Steering Committee, even though their work, to an extent, is really just beginning. That is, synthesizing all the comments that we've received in the public meetings and distilling the concept papers into recommendations. That's Bob Bissell, Steve Borth, Woodie Curtis, Tammy Doherty, Tom Essig, Rosemary Hogan, Falk Kantor, Janet Lamb, Bill McNutt, Mary Lynne Miller and Sharon Stoffel and also Melanie Galloway and Bob Hendrix, who were working with us on the concept papers very early on initially.

I'd like to use some words that have been used earlier today. I'd like to reinforce, reaffirm, and also reiterate that what we have presented to you today are concepts. They were based on The Federal Register comments, on the various resolutions, various papers we have received

in the past. What the committee did was wrap those comments and stacked them. We looked for themes, talked about how those themes should be crafted in proposals and that is what you saw today. Using the accordion process that we mentioned in the overview, of course, now we have brought these proposals back to you, brought the concepts back to say is this reasonable or an accurate reflection of the aggregation of all of the comments that we have received?

So, that was today's process. You still have an opportunity to submit comments. If you think about something as you leave this meeting today, we welcome you to submit written comments, the address is on the overhead, to Nancy Goldstein. We are asking that you send those in prior to January 1, because if you recall the schedule that we presented during the overview, the committee will be meeting early in the year to begin to refine these concepts into the recommendations that might be made.

I also would like to mention, I think many of you may be aware of it, but interestingly enough, the committee had to work with comments that varied from, oh, yes, delegate everything to the state all the way to don't change a thing about the program. So, taking that wide disparity of comments, we crafted these proposals. They may be,

several of them may be consolidated. Some of them may become early recommendations, right away, with some needing further refinement prior to becoming a recommendation, and some may not result in recommendations at all.

We've developed concepts and we're bringing them back to you and we ask for your comments again on that, and at that point we'll be making recommendations that will come back out for comment.

If I understood one of the last comments, you want to be sure that you have The Federal Register notice or you are aware of when those dates are. Check the REP home page. Everything we're doing will be posted there. I understand that if you are doing it yourself, that there is -- you may check it today and check it tomorrow and it appears that nothing has been changed, but it may have changed. There is a refresh function that needs to be taken care of. So, be sure that if you have any question about the process, Ihor is right here on this side of the auditorium. See him and ask him about the specific process for getting into the REP home page, because apparently that initial screen does not indicate the full depth of what might have been updated most recently.

Also, on The Federal Register notice, when

proposed recommendations do come out for notice, that date of The Federal Register will be posted on the REP home page and also, all of these documents are available in the public document rooms of the utilities. If you have any other comments about venues that we might use to be sure to get the word out appropriately and early, we'd be most happy to accommodate those.

Well, I'd like to thank each one of you again for coming out on this rainy Friday. I can't tell you how much we appreciate your comments and that they will be most instrumental in assisting us in refining the recommendations. That concludes our public meeting in Washington, D.C. Thank you.

(Whereupon, at 11:50 a.m., the meeting was concluded.)

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REPORTER'S CERTIFICATE

DOCKET NO.:

TITLE: REP Program Strategic Review At-Large Stakeholders Meeting

DATE: December 5, 1997

LOCATION: Washington, D.C.

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Federal Emergency Management Agency.

Date: December 5, 1997

Michael A. Pecknay

Official Reporter

Heritage Reporting Corporation

1220 L Street, N. W.

Washington, D. C. 20005

Consideration of Potassium (KI) in Emergency Plans

- Consideration of Potassium (KI) in Emergency Plans - Update
- Frequently Asked Questions About Potassium Iodide and Radiological Emergency Preparedness

FOOTER: FEDERAL EMERGENCY MANAGEMENT AGENCY

REP Banner, this is an image map, please refer to text links below.

SRSC's Initiatives Implementation Matrix

- Implementation Matrix, Word Documnet (87KB)

REP Banner, this is an image map, please refer to text links below.

Evaluation Areas for Interim Use

REP Banner, this is an image map, please refer to text links below.

EVALUATION AREAS 1 - 6

Evaluation Areas 1 - 6 are posted for interim use during the four pilot exercises: Crystal River (FL) and Duane Arnold (IA) on October 18, 2000; Susquehanna (PA) on November 2, 2000; and Point Beach (WI) on December 5, 2000. After the pilot exercises are assessed by a Pilot Evaluation Team, with membership from the RAC Chairs and FEMA Headquarters, the Evaluation Areas will be revised, as necessary, and published in the Federal Register for public comment.

REP Banner, this is an image map, please refer to text links below.

EVALUATION AREA 1

Emergency Operations Management
(7/14/00)
Sub-element 1.a - Mobilization

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654, A.4., D.3., 4., E.1., 2., H.4)

Extent of Play

Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. At each facility a roster and/or procedures indicating 24-hour staffing capability for key positions (those emergency personnel necessary to carry out critical functions), as indicated in the plan and/or procedures, should be provided to the evaluator (demonstration of a shift change is not required). In addition, responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the extent of play agreement, at those

facilities located beyond a normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 1.b - Facilities

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have facilities to support the emergency response.

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H)

Extent of Play

Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

Facilities must be set up based on the ORO's plans and procedures and as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 1.c - Direction and Control

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to control their overall response to an emergency.

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide

direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d., 2.a.,b.)

Extent of Play

All activities associated with direction and control must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 1.d - Communications Equipment

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should establish at least two reliable communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams. Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1., 2.)

Extent of Play

Communications systems will only be evaluated for this criterion if there have been substantial changes in equipment or mission, unless a communications breakdown adversely impacts the exercise. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system and uses a separate power source. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures.

All activities associated with the management of communications capabilities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 1.e - Equipment and Supplies to Support Operations

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have emergency equipment and supplies adequate to support the emergency response.

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H., J.10.a.b.e.f.j.k., 11, K.3.a.)

Extent of Play

Equipment within the facility(ies) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimeter(s) should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimeters should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and,

where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise or provided in the Annual Letter of Certification submission. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, a letter from the drug manufacturer should be available that documents a formal extension of the KI expiration date.

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc) should be available or their availability described.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Updated: October 17, 2000

REP Banner, this is an image map, please refer to text links below.

EVALUATION AREA 2

Protective Action Decision-making

(7/14/00)

Sub-element 2.a - Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG-0654, which provides that an offsite response organization (ORO) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4.)

Extent of Play

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established protective action guides (PAGs) for KI administration. The KI decision-making process should involve close coordination between appropriate assessment and decision-making staff.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 2.b. Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Intent

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation and base these choices on protective action guides (PAGs) from the ORO's plans and procedures, FRC Reports Numbers 5 and 7 or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8., 10., 11., & Supplement 3)

Extent of Play

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PARs) for

decision-makers based on available information and recommendations from the licensee.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9., 10.m.)

Extent of Play

OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs within a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field data, or information on plant conditions.

The decision-makers should demonstrate the capability to change protective actions as appropriate.

Where specified in the plan and/or procedures, responsible OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 2.c - Protective Action Decisions for Protection of Special Populations

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9., 10.c.d.e.g.)

Extent of Play

All decision-making activities associated with protective actions, including

consideration of available resources, for special population groups, must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 2.d. - Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate protective action guides (PAG), and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0654, I.8., J.11)

Extent of Play

During an accident at a nuclear power plant, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the accident, and depending on the nature of the release could impact the ingestion pathway for weeks or years. It is expected that the ORO(s) will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's emergency classification levels (ECL). Such actions may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. The

radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO should demonstrate timely decisions to minimize radiological impacts from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and to the extent practical, coordinated with neighboring and local OROs.

OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 2.e. - Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

Intent

The sub-element is derived from NUREG-0654, which provides that OROs have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

Criterion 2.e.1: Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, A.1.b., I.10., M)

Extent of Play

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs and control access to evacuated areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs.

Re-entry: Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.

Return: Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return.

Decisions concerning relocation, re-entry, and return may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Updated: October 17, 2000

REP Banner, this is an image map, please refer to text links below.

EVALUATION AREA 3

Protective Action Implementation

(7/14/00)

Sub-element 3.a - Implementation of Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG-0654, which provides that offsite emergency response organizations (ORO) should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

Radiation exposure limits for emergency workers are defined in the ORO's plans and procedures. Emergency workers working in a high radiation area must be able to determine their cumulative radiation exposure with direct-reading dosimetry and know what to do when administrative exposure limits are reached while carrying out a mission to protect the health and safety of the public. (A high radiation area is an area in which an individual could receive 100 mrem in any one hour.)

Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the

public who must reenter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.)

Extent of Play

OROs should demonstrate the capability to provide appropriate direct and permanent record dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that take into consideration Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g. written procedures and/or co-workers) in providing responses.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 3.b - Implementation of KI Decision

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option, reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG-0654, E. 7., J. 10. e., f.)

Extent of Play

OROs should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise

indicated in the extent of play agreement.

Sub-element 3.c - Implementation of Protective Actions for Special Populations

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special population groups (hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, transportation dependent, etc). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Criterion 3.c.1: Protective action decisions are implemented for special population groups within areas subject to protective actions. (NUREG-0654, E.7., J.9., 10.c.d.e.g.)

Extent of Play

Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special population groups.

OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and resources providers may be simulated; however, for exercise purposes all simulated or actual contacts should be logged.

All implementing activities associated with protective actions for special population groups must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG-0654, J.10.c., d., g.)

Extent of Play

In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools should demonstrate the capability to make prompt decisions on protective actions for students. School officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

Officials of the participating school(s) or school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-element 3.d. - Implementation of Traffic and Access Control

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, including relocation and restriction of access to evacuated areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g., j., k.)

Extent of Play

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with evacuation/sheltering decisions, in a timely manner. OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview in accordance with the extent of play agreement.

In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10.j., k.)

Extent of Play

OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, simulated contacts should be logged.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-element 3.e - Implementation of Ingestion Pathway Decisions

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions. NUREG-0654, J.9., 11.)

Extent of Play

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 3.e.2: Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural

production. (NUREG-0654, E.5., 7., J.9, 11.)

Extent of Play

Development of measures and strategies for implementation of ingestion pathway zone (IPZ) protective actions should be demonstrated during exercise play by formulation of protective action information for the general public and food producers and processors. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 3.f. - Implementation of Relocation, Re-entry, and Return Decisions

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1., 3.)

Extent of Play

Relocation: OROs should demonstrate the capability to coordinate and

implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs.

Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily reenter the evacuated area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the evacuated area. Monitoring and decontamination facilities will be established as appropriate.

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads and schools.

Communications among OROs may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Updated: October 17, 2000

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EVALUATION AREA 4

Field Measurement and Analysis

(7/14/00)

Sub-element 4.a - Plume Phase Field Measurements and Analyses

Intent

This sub-element is derived from NUREG-0654, which provides that offsite response organizations (ORO) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne

radioiodine and particulates. (NUREG-0654, H.10, I.8., 9., 11.)

Extent of Play

Field teams should have instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure consistent with the intended use of the instrument and the ORO's plans and procedures, including radiological protection/exposure control of team members and detection of activity on the air sample collection media. All instruments, including air sampling flow meters, should be operated, maintained, and calibrated in accordance with the manufacturer's recommendations (or at least annually for the CDV-700 series or if there are no manufacturer's recommendations for a specific instrument). A label indicating such calibration should be on each instrument or verifiable by other means. An appropriate radioactive check source should be used to verify proper operational response for each low range radiation measurement instrument (less than 1 R/hr) and for high range instruments when available. If a source is not available for a high range instrument, a procedure should exist to operationally test the instrument before entering an area where only a high range instrument can make useful readings.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8., 11., J.10.a).

Extent of Play

Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts,

etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.8., 9., 11.)

Extent of Play

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. The methodology, including contamination control, and instrumentation will be in accordance with the ORO plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 4.b - Post Plume Phase Field Measurements and Sampling

Intent

This sub-element is derived from NUREG-0654, which provides that OROs

should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion emergency planning zone (IPZ) and for relocation, re-entry and return measures.

This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

Criterion 4.b.1: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision-making. (NUREG-0654, I.8., J.11.)

Extent of Play

The ORO field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. The methodology, including contamination control, and instrumentation should be in accordance with the ORO's plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 4.c - Laboratory Operations

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-

making.

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3., I.8., 9., J.11)

Extent of Play

The laboratory should be appropriately equipped to provide analyses of media, as requested on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g. transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

The laboratory staff is qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Updated: October 17, 2000

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EVALUATION AREA 5

Emergency Notification & Public Information

(7/14/00)

Sub-element 5.a - Activation of the Prompt Alert and Notification System

Intent

This sub-element is derived from NUREG-0654, which provides that offsite response organizations (ORO) should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum: 1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1., 4., 5., 6., 7.)

Extent of Play

Responsible OROs should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the four items listed above in criterion 5.a.1.

For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.

The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.2: Activities associated with primary alerting and notification of the public are completed within 15 minutes of verified notification from the utility of an emergency situation requiring urgent action (fast-breaking situation). The initial instructional message to the public must include as a minimum: 1) identification of the State or local government organization and the official with the authority for providing the alert and message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific

emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information. In addition, the ORO must demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures. (10 CFR Part 50, Appendix E and NUREG-0654, E. 1., 3., 5., 6., 7.)

Extent of Play

The ORO's capability to meet this criterion must be evaluated at least once every six years during a fast breaker drill. The ORO's established Fast-Breaking incident procedures will be evaluated. Applicable OROs should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ within 15 minutes of verified notification from the utility that a situation exists requiring urgent action. The initial instructional message should include the four items listed above in criterion 5.a.2. In addition, the OROs should demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures. This contact may occur either prior to, or immediately subsequent to, activation of the primary alerting and notification system. Although it must be accomplished in a timely manner, contact of the decision-maker does not have to be completed within the 15-minute timeframe discussed above.

The drill will be scheduled to be conducted "Unannounced" within a one-week window. The evaluators and controllers for each jurisdiction will be briefed in detail concerning the extent of play and timing of the drill. Evaluators and controllers will be stationed at each location where actions will be initiated, where alert signals are controlled, and at the applicable primary notification system facility(ies). The actual activation of the alert signal may be simulated; however, all activities leading up to activation should be demonstrated and should be completed within the 15-minute time frame. The "clock" will start when the transmission of an initial notification of a General Emergency and a protective action recommendation from the utility is completed and verified. It should be noted that, coordination among OROs is normally desirable; however, in the event of a fast breaker situation this coordination is not necessary prior to activation of the primary alert and

notification sequence. Within 15 minutes, actual contact of the primary notification system facility(ies) and dissemination of the initial message should be demonstrated. Broadcast of the message may be simulated; however, once again, all activities leading to that point should be demonstrated.

The drill will be terminated when the alert signal activation (simulated) is initiated, the broadcast (simulated) is initiated by the primary notification system facility(ies), and an authorized offsite decision-maker has been contacted.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E. 6., Appendix 3.B.2.c)

Extent of Play

OROs with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information (e.g. information required by criterion 5.a.1).

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be

simulated (e.g., the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location.

Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (e.g., the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the Public Address system will be conducted at some agreed upon location.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Sub-element 5.b - Emergency Information and Instructions for the Public and the Media

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654 also provides that a system be available for dealing with rumors.

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E. 5.,7., G.3.a., G.4,a.,b.,c.)

Extent of Play

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

The OROs should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions to assist the public in carrying out protective action decisions provided to them (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, rumor control telephone number, etc.). OROs should demonstrate the capability to use language that is clear and understandable to the public, including tribes, within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.

If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination

to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute press releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and press releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and press releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with rumors. Rumor control staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the rumor control staff, including information that corrects false or inaccurate information when trends are noted, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or press releases.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

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EVALUATION AREA 6

Emergency Notification & Public Information

Support Operation/Facilities

(7/14/00)

Sub-element 6.a - Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h.; K.5.b.)

Extent of Play

Radiological monitoring, decontamination, and registration facilities for evacuees/ emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the extent of play agreement. Expected demonstration should include 1/3 of the monitoring

teams/portal monitors required to monitor within 12 hours 20% of the population allocated to the facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the emergency planning zone (EPZ) population planning base within about 12 hours. This monitoring productivity rate per hour is the number of evacuees that can be monitored per hour by the total complement of monitors using an appropriate monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the twelve-hour requirement can be meet. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (e.g. partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential vehicle contamination. The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated.

Monitoring personnel should explain the use of action levels for determining the need for decontamination. They should also explain the procedures for referring evacuees who cannot be adequately decontaminated for assessment and follow up in accordance with the ORO's plans and procedures. Contamination of the individual will be determined by controller inject and

not simulated with any low-level radiation source.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 6.b - Monitoring and Decontamination of Emergency Worker Equipment

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. (NUREG-0654, K.5.b)

Extent of Play

The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the ORO's plans and procedures. Specific attention should be given to equipment, including vehicles that were in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment, including vehicles, based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency in order to provide an opportunity for evaluators to conduct a walk-through of the area. Monitoring procedures should be demonstrated for a minimum of one vehicle. Decontamination capabilities may be simulated and conducted by interview.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-element 6.c - Temporary Care of Evacuees

Intent

This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 12.)

Extent of Play

Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, the adequacy of physical facilities, equipment, personnel, supplies, and procedures for the acquisition and management of supplies. In this simulation, it is not necessary to set up operations as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this objective, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility(ies). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-element 6.d - Transportation and Treatment of Contaminated Injured Individuals

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2, H.10., K.5.a.b., L.1., 4.)

Extent of Play

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. However, to avoid taking an ambulance out of service, any vehicle (e.g., car, truck, or ambulance) may be utilized to transport a simulated victim to the medical facility. If an ambulance is used, normal communications between the ambulance/ dispatcher and the receiving medical facility should be demonstrated. This would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the simulated victim may be performed prior to transport, done en route, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency.

Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

Monitoring, decontamination, and contamination control efforts will not delay urgent medical care for the simulated victim.

All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

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