II. REP PLANNING GUIDANCE

A. INTRODUCTION

1. Purpose and Scope

The planning guidance in this section consolidates much of the current FEMA REP Program guidance that has been developed by FEMA and other involved Federal departments and agencies. The guidance herein is intended for use by State, Tribal, local, and private response organizations for reviewing, revising, and, if necessary, developing radiological emergency response plans in support of the licensing of commercial nuclear power plants. It is also intended for use by FEMA staff members responsible for evaluating plans and by other Federal staff who assist FEMA as members of the RACs.

The term "plan" as used in this document includes both plans and associated implementing procedures. Radiological emergency response plans and procedures are reviewed in accordance with 44 CFR § 350, which references the applicable planning standards and evaluation criteria outlined in *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants* (NUREG-0654/FEMA-REP-1, Revision 1, November 1980), cited herein as "NUREG-0654." FEMA has provided guidance to interpret, clarify, and apply the planning standards and evaluation criteria through FEMA policy and Guidance Memorandum (GMs) and the FEMA-REP series documents.

This section incorporates much of the previously issued guidance; however, not all of the detailed and technical information contained in the documents of the FEMA-REP series can be included in the explanation of the planning standards. (For a list of detailed technical guidance, see Appendix C.) This section is the primary source of guidance pertaining to radiological emergency response planning.

2. Section Contents and Organization

Subsection B, *Conducting Plan Reviews*, outlines the procedures for plan review.

Subsection C, *Planning Standards*, is a one-page listing of the 16 planning standards from 44 CFR 350 and NUREG-0654.

Subsection D, *Planning Guidance*, lists the Planning Standards and Evaluation Criterion per NUREG-0654 and official revisions as footnoted and provides interpretation and application of the guidance, including the following:

- An explanation of the criterion based on current guidance;
- Checkmarks for which plans should address each planning criterion (i.e., Licensee, State, or local); and

- A listing of evaluation criteria related to each planning criterion.

B. CONDUCTING PLAN REVIEWS

1. Radiological Emergency Preparedness Plans

A REP plan describes what a given jurisdiction will do in the event of a radiological emergency. The REP plan is a part of an organization's Emergency Operations Plan (EOP) for all types of hazards and may be documented as a hazard-specific appendix to the EOP as recommended in FEMA's State and Local Guide for All-Hazard Emergency Operations Planning (SLG 101). Most of the REP plan is devoted to describing the emergency response activities and functions that need to be performed and designating the Offsite Response Organizations (OROs) that perform them. Most plans describe emergency functions at three levels of detail:

- A "concept of operations" section gives an overview of the entire jurisdiction's response organization and briefly describes the main functions of each agency.

- Agency-specific chapters give more detailed descriptions of agency roles and responsibilities.

- Step-by-step procedures outlining the tasks to be performed by particular response staff are incorporated into the plan or attached as separate volumes. For example, the Health Department may have a specific procedure for its Emergency Operations Center (EOC) representative, outlining which Health Department resources to activate at particular emergency classification levels (ECLs). Health Department staff members assigned to radiological monitoring may have their own procedures that outline equipment checks, monitoring procedures, reporting protocols, etc.

The REP plan for a given jurisdiction also generally describes how that jurisdiction's response efforts relate to the efforts of other jurisdictions and organizations, such as the Licensee, neighboring local and State governments, and the Federal government.

In addition to describing emergency roles, a REP plan also contains policies and procedures for routine administration of the preparedness program. For example, the plan typically cites the statutory authority and responsibilities of public officials with respect to emergency management, describes the jurisdiction's preparedness training and exercise program, and assigns responsibilities and procedures for maintaining equipment and for updating the plan.

REP plans are generally prepared by a State, county, Tribal, or local jurisdiction. In some cases, a specific agency or institution, such as a school district, hospital, university, or prison, will have its own plan; preparation of these plans is coordinated with the plans of the State and local jurisdictions in which the institution is located. Such plans usually cover only a subset of the functions within an organization's all-hazards EOP. However, they must be reviewed because they may be the primary documents that guide efforts to protect particular parts of the population. In addition, portions of REP plans may also be comprised of separate documentation (e.g., detailed training plans, public information/affairs procedures, etc.) that supports the basic

plan, agency-specific chapters, and step-by-step procedures as mentioned above. This supporting documentation should be reviewed to verify the adequacy of planning necessary to satisfy various criteria of the NUREG-0654 planning standards and other REP guidance.

2. Division of Functions and Applicability of Criteria

NUREG-0654 contains the planning standards and evaluation criteria adopted by the U.S. Nuclear Regulatory Commission (NRC) and FEMA for evaluating emergency plans and preparedness in support of commercial nuclear power plant licensing. Licensees and State, Tribal, and local governments generally work together to ensure that all functions and capabilities described in NUREG-0654 are available. However, the specific allocation of functions among jurisdictions may vary from site to site. Some functions described in NUREG-0654 may be primarily (or solely) State responsibilities, some may be local, and some may be both. When evaluating a plan, the reviewer must be aware of the functions for which the jurisdiction is responsible. Generally, these functions are described in the concept of operations section of the REP plan. In some cases, it may be necessary for the reviewer to examine other related plans to determine how responsibilities are allocated among jurisdictions. For example, when reviewing a local plan, it may be necessary to examine the corresponding State plan to fully understand the breakdown of responsibilities between the State and the local jurisdictions. Although the applicability of each evaluation criterion to Tribal plans is not specified, generally most criteria applicable to local government plans (and perhaps some applicable to State plans) will also be applicable to Tribal plans. Once again, the reviewer must be aware of the overall concept for offsite emergency response and the functions for which the jurisdiction is responsible.

A plan review is normally conducted by evaluating the plan against the entire set of NUREG-0654 criteria (a cross-reference to the corresponding NUREG criterion/criteria must be provided when a plan is submitted for review to aid the reviewer in locating information). However, because the allocation of functions varies among jurisdictions, a given plan usually addresses most, but not all, functions described in NUREG-0654. If a particular function is not addressed in the REP plan, the plan should reference the document in which it is addressed. For example, a local plan may stipulate that the Licensee and the State conduct radiological monitoring and dose assessments. A reviewer must crosscheck plans, if necessary, to make sure that each point is covered somewhere and that the pertinent references have been clearly stated in both places.

The result of the reviewer's evaluation is expressed as Adequate, Inadequate, or Not Applicable:

- **Adequate:** The contents of the plan and procedures are consistent and in full compliance with the plan requirements delineated in the stated NUREG-0654 evaluation criterion/criteria.

- **Inadequate:** The contents of the plan and procedures do not meet the NUREG-0654 evaluation criterion/criteria.

- **Not Applicable:** The NUREG-0654 criterion/criteria do not apply to the plan and procedures being evaluated. For example, some criteria that are applicable to State REP plans may not apply to local plans.

3. Format for Plan Reviews

A partial sample of the general format used by FEMA to document plan reviews is shown in Figure 1 on the following pages. The plan review format lists the planning standards and evaluation criteria from NUREG-0654 in bold italics. Revisions of evaluation criteria are included, along with a footnote citing the official revision document. Planning standards and evaluation criteria applicable only to utilities are not listed in the plan review format since they do not apply to reviews of Offsite Response Organization plans.

For each evaluation criterion applicable to the plan or procedure under review, the reviewer records the following information as concisely as possible:

- **Statement:** Briefly describe how the plan or procedure addresses, or fails to address, the requirements of the evaluation criterion. State the facts only. List any recommended changes under "Evaluation." If the criterion is not applicable to the organization, enter N/A and skip or delete Reference and Evaluation.

- **Reference:** List the principal section(s) of the plan or procedures that address the evaluation criterion.

- **Evaluation:** Enter the appropriate rating (Adequate or Inadequate) based on your "Statement." List specific changes recommended for the correction of the "Inadequate" rating. Typographical and other minor errors that are noted should also be listed for correction, even if the rating is "Adequate."

Figure 1
Portion of Sample Plan Review Format

(List the complete title and date of the plan.)

Review and Evaluation against Planning Standards and Evaluation Criteria of NUREG-0654/FEMA REP-1, Rev. 1
(Evaluation elements applicable only to utilities are not listed.)

A. ***Assignment of Responsibility (Organization Control) Planning Standard: Primary responsibilities for emergency response by the nuclear facility Licensee, and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.***

A.1.a. **Evaluation Criterion:** ***Each plan shall identify the State, local, Federal and private sector organizations (including utilities), that are intended to be part of the overall response organization for Emergency Planning Zones. (See Appendix 5.)***

A.1.a. Statement: A listing of participating agencies is included in the cover section of the plan. This listing identifies the type of agency, that is, city, county, State, Federal, and private sector organizations. The roles and responsibilities for each response agency are defined in the plan. Tables IV-2 and IV-3 show the Franklin County Organizational Functional Assignments for the Emergency Operations Center (EOC) and field locations, as well as the primary and support responsibilities of the response organizations.

A.1.a. Plan Reference: Basic Plan, Section IV, Tables IV-2 and IV-3.

A.1.a. Evaluation: Adequate.

A.1.b. **Evaluation Criterion:** ***Each organization and suborganization having an operational role shall specify its concept of operations, and its relationship to the total effort.***

A.1.b. Statement: The Concept of Operations Section describes the overall emergency response effort from notification of emergency responders, notification of the public, establishment of emergency worker/assistance centers, protective measures, public information, communications, and use of the Emergency Operations Center as the command post for a coordinated response. Table IV-1 provides the Franklin County Response Actions for the four emergency classification levels for a radiological emergency at the Columbia Generating Station.

A.1.b. Plan Reference: Plan Overview, Sections IV and I.1.4, and Table IV-1.

A.1.b. Evaluation: Adequate.

A.1.c. Evaluation Criterion: ***Each plan shall illustrate these interrelationships in a block diagram.***

A.1.c. Statement: Table IV-2 provides a detailed description of the Franklin County organizational functional assignments and organizational flow. Table IV-2a shows an organizational block diagram for most, but not all, EOC positions.

A.1.c. Plan Reference: Section IV.1.4, Tables IV-2 and IV-2a.

A.1.c. Evaluation: Inadequate. Table IV-2a does not include the following positions, which, in other sections of the plan, are shown to be part of the EOC Operations and Support Group. The following positions need to be added to Table IV-2a: American Red Cross (ARC) Representative, Washington State Department of Agriculture Liaison Officer, Washington State Department of Health Liaison Officer, and Washington National Guard Liaison Officer.

A.1.d. Evaluation Criterion: ***Each organization shall identify a specific individual by title who shall be in charge of the emergency response.***

A.1.d. Statement: The Board of County Commissioners of Franklin County is responsible for overall emergency planning and activities in Franklin County. To execute this responsibility, it has designated the first County Commissioner to be contacted by Dispatch as the Emergency Chair, to serve as the primary decision maker during emergency operations. The Franklin County Sheriff will act as the Emergency Chair prior to the assumption of those duties and responsibilities by a Franklin County Commissioner.

A.1.d. Plan Reference: Basic Plan, Sections IV.3.0 and IV.5.3.

A.1.d. Evaluation: Adequate. However, the Section listed in the Plan's NUREG-0654 Cross Reference for Evaluation Criterion A.1.d needs to be corrected to Sections IV.3.0 and IV.5.3.

A.1.e. Evaluation Criterion: ***Each organization shall provide for 24-hour per day emergency response, including 24-hour per day manning of communications links.***

A.1.e. Statement: The Plan states that each organization has the capability of continuous operation during an emergency and can respond personnel to the Franklin County EOC and other emergency response facilities in a timely manner. The most senior representative from each agency who responds to the EOC is responsible for

assigning agency personnel to staff agency emergency functions on a 24-hour per day basis.

A.1.e. Plan Reference: Basic Plan, Sections IV and IV.1.1.

A.1.e. Evaluation: Adequate.

Figure 1 (Cont.)

Rating Summary for *(List Plan title and date.)*

Element	Rating	Element	Rating	Element	Rating
A.1.a	Adequate	H.3	Adequate	M.1	Adequate
A.1.b	Adequate	H.4	Adequate	M.3	N/A
A.1.c	Inadequate	H.7	Adequate	M.4	N/A
A.1.d	Adequate	H.10	Adequate	N.1.a	Adequate
A.1.e	Adequate	H.11	Adequate	N.1.b	Adequate
A.2.a	Adequate	H.12	N/A	N.2.a	Adequate
A.2.b	Adequate	I.7	N/A	N.2.c	Adequate
A.3	Adequate	I.8	N/A	N.2.d	Adequate
A.4	Adequate	I.9	N/A	N.2.e	N/A
C.1.a	N/A	I.10	N/A	N.3.a	Adequate
C.1.b	N/A	I.11	N/A	N.3.b	Adequate
C.1.c	Adequate	J.2	Adequate	N.3.c	Adequate
C.2.a	Adequate	J.9	Adequate	N.3.d	Adequate
C.3	N/A	J.10.a	Adequate	N.3.e	Adequate
C.4	Adequate	J.10.b	Adequate	N.3.f	Adequate
D.3	Adequate	J.10.c	Adequate	N.4	Adequate
D.4	Adequate (?)	J.10.d	Adequate	N.5	Adequate
E.1	Adequate	J.10.e	Adequate	O.1	Adequate
E.2	Adequate	J.10.f	Adequate	O.1.b	Adequate
E.5	Adequate (?)	J.10.g	Adequate	O.4.a	Adequate
E.6	Adequate	J.10.h	Adequate	O.4.b	N/A
E.7	Adequate	J.10.i	Adequate	O.4.c	N/A
F.1.a	Adequate	J.10.j	Adequate	O.4.d	Adequate
F.1.b	Adequate	J.10.k	Adequate	O.4.f	Adequate
F.1.c	Adequate	J.10.l	Inadequate	O.4.g	Adequate
F.1.d	Adequate	J.10.m	N/A	O.4.h	Adequate
F.1.e	Adequate	J.11	Adequate	O.4	Adequate
F.2	Adequate	J.12	Adequate	O.5	Adequate
F.3	Adequate	K.3.a	Adequate	P.1	Adequate
G.1	Inadequate	K.3.b	Adequate	P.2	Adequate
G.2	Adequate	K.4	Adequate	P.3	Adequate
G.3.a	Adequate	K.5.a	Adequate	P.4	Adequate
G.4.a	Adequate	K.5.b	Adequate	P.5	Adequate
G.4.b	Adequate	L.1	Adequate	P.6	Adequate
G.4.c	Adequate	L.3	N/A	P.7	Adequate
G.5	Adequate	L.4	Adequate	P.8	Adequate
				P.10	Adequate

Rating Categories:

Adequate:	The statements and concepts in the plan adequately address the planning criterion.
Adequate (?)	More information is needed to determine if the statements and concepts in the plan adequately address the planning criterion.
Inadequate	The statements and concepts in the plan do not adequately address the planning criterion.
N/A	The planning criterion is not applicable to this Offsite Response Organization (ORO).

C. PLANNING STANDARDS

Planning Standard A – Assignment of Responsibility (Organization Control)

Planning Standard B – Onsite Emergency Organization

Planning Standard C – Emergency Response Support and Resources

Planning Standard D – Emergency Classification System

Planning Standard E – Notification Methods and Procedures

Planning Standard F – Emergency Communications

Planning Standard G – Public Education and Information

Planning Standard H – Emergency Facilities and Equipment

Planning Standard I – Accident Assessment

Planning Standard J – Protective Response

Planning Standard K – Radiological Exposure Control

Planning Standard L – Medical and Public Health Support

Planning Standard M – Recovery and Reentry Planning and Post-Accident Operations

Planning Standard N – Exercises and Drills

Planning Standard O – Radiological Emergency Response Training

Planning Standard P – Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

D. PLANNING GUIDANCE

1. Planning Standard A – Assignment of Responsibility (Organization Control)

Primary responsibilities for emergency response by the nuclear facility Licensee and by State and local organizations within the EPZs have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

NUREG CRITERION

A.1.a. ***Each plan shall identify the State, local, Federal, and private sector organizations (including utilities) that are intended to be part of the overall response organization for EPZs.***

Explanation

The plan should document and describe all State, Federal, Tribal, local, and private-sector organizations that comprise the overall response organization and the responsibilities each assumes. *Principal* response organizations, such as State, Tribal, and local agencies (e.g., departments, executive offices) and nuclear facilities (the Licensees), having *lead* roles in emergency planning and preparedness should be identified.

All other organizations that may play a part in the emergency response should also be identified. This list should include "suborganizations," defined as any organization (e.g., agency, department, office, or local jurisdiction) having a supporting role to the principal or lead organization(s) in emergency planning and preparedness.

REP plans should also list any Federal organizations (e.g., agencies, departments, or their components) or private-sector organizations (e.g., volunteer organizations such as the American Red Cross [ARC], Radio Amateur Civil Emergency Service [RACES]) that have a response or support role.

The plan should:

1. Describe all State, Federal, Tribal, local, and private-sector organizations comprising the overall Offsite Response Organization.

2. Identify the principal response organizations.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

A.1.b. ***Each organization and suborganization having an operational role shall specify its concept of operations and its relationship to the total effort.***

Explanation

The plan should describe exactly what the organization plans to do in an emergency, how this will be accomplished, and by whom. This description of an organization's operation should also include a discussion of how the organization contributes to the overall emergency response (e.g., how a local plan relates to a State plan).

The plan should:

1. Specify the organization's role in an emergency.

2. Specify how the organization will carry out its role in an emergency.

3. Discuss how the organization contributes to the overall emergency response.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

A.1.c. ***Each plan shall illustrate these interrelationships in a block diagram.***

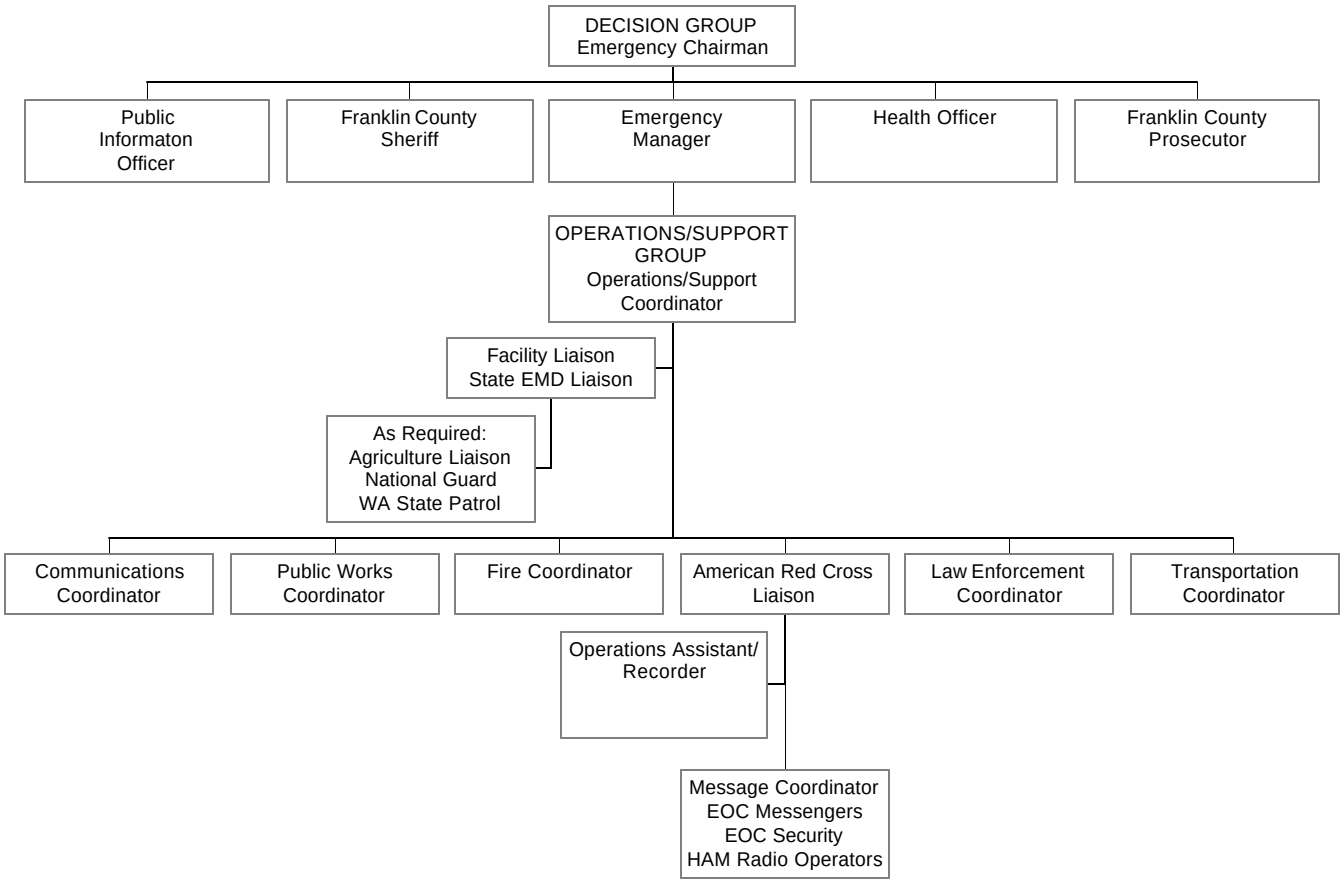
Explanation

The plan should include an illustration of each organization and its relationship to the total emergency response effort. A sample block diagram/organization chart is shown on the following page (Figure 2).

Plan(s) That Should Include This Information

Licensee X State X Local X

Figure 2
Sample Block Diagram/Organizational Chart
(Planning Criterion A.1.c.)



NUREG CRITERION

A.1.d. ***Each organization shall identify a specific individual by title who shall be in charge of the emergency response.***

Explanation

The plan should identify the person who has the authority to direct emergency response activities. Typically, at the State level, the Governor is designated; however, the Governor's designee, typically the director of the state emergency management agency, usually implements the emergency response. At the local level, the person in charge of emergency operations (e.g., mayor, chair of county board of supervisors) varies; this person usually delegates the operational authority to a Director or Coordinator of Emergency Management. Whether at the State, Tribal, or local level, organizations should identify a specific individual (by title) who is in charge of the emergency response and specify who coordinates response activities under the authority of the person in charge.

The plan should:

1. Identify a specific individual by title to be in charge of the emergency response.

2. Specify who coordinates response activities under the authority of the person in charge.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

A.1.e. ***Each organization shall provide for 24-hour per day emergency response, including 24-hour per day manning of communications links.***

Explanation

The intent of this criterion is to ensure that organizations are capable of (1) responding to an emergency on a 24-hour basis and (2) maintaining communications capabilities around the clock. Organizations should document and describe their procedures for providing 24-hour emergency response and maintain personnel rosters specifying key names, positions, or titles for a one-for-one replacement of personnel responsible for maintaining 24-hour communications links.

In the plans, organizations should specify where the communications center (e.g., warning point, 911 center) is located, describe the primary and backup means of notification, and

identify the individual(s) or organizations responsible for this emergency response function.

The plan or procedures should:

1. Describe the procedures to provide for 24-hour emergency response.

2. Refer to a personnel roster for a one-for-one replacement of personnel responsible for maintaining 24-hour communication links.

3. Specify where the 24-hour communications center is located.

4. Specify who is responsible for managing the 24-hour communications center.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

A.2.a. ***Each organization shall specify the functions and responsibilities for major elements and key individuals by title, of emergency response, including the following: Command and Control, Alerting and Notification, Communications, Public Information, Accident Assessment, Public Health and Sanitation, Social Services, Fire and Rescue, Traffic Control, Emergency Medical Services, Law Enforcement, Transportation, Protective Response (including authority to request Federal assistance and to initiate other protective actions), and Radiological Exposure Control. The description of these functions shall include a clear and concise summary such as a table of primary and support responsibilities using the agency as one axis, and the function as the other. (See Section B for Licensee.)***

Explanation

Both primary and support organizations should clearly describe their responsibilities and functions for major elements. The plan should:

1. Identify key individuals (by title) who have emergency response roles.

2. Describe the responsibilities by functional areas listed above.

3. Include a matrix of these responsibilities by functional area that identifies organizations responsible for primary and support roles. A sample matrix/table is shown on the following page (Figure 3).

Figure 3
Sample Functional Responsibilities Matrix/Table
(Planning Standard A.2.a.)

Agency / **Function**	Co. Commis-sioners	Dispatch	Health District	Co. EM	Fire Services	City Police	Co. Sheriff Office	Co. Public Works	School Districts	Red Cross	EAS Radio	Comm. Coord.	City Officials	PIO
Direction/Control	**P**			**C**			**A**						**A**	
Alert & Notification	**P**			**S**			**S**	**S**			**S**			
Communications		**S**		**A**								**P**		
Public Information				**C**							**S**			**P**
Public Health			**P**							**S**				
Sanitation			**P**					**A**						
Social Services				**C**						**P**			**A**	
Fire & Rescue					**P**	**S**	**S**							
Traffic Control					**S**	**S**	**P**	**A**						
Emergency Med Svc					**P**									
Law Enforcement						**A**	**P**							
Transportation				**C**					**P**					
Mass Care Facility				**C**					**S**	**P**				
Radiation Exposure Control	**S**		**P**	**C**	**S**	**S**	**S**	**S**						
Public Education	**S**		**S**	**C**	**S**	**S**	**S**	**S**	**S**	**S**				**P**
Evacuation	**P**		**S**	**C**					**S**	**S**	**S**		**S**	**S**
Prevention & Preparedness	**S**		**S**	**P**	**S**	**S**	**S**	**S**	**S**	**S**				**S**
Protective Response Training	**S**	**S**	**S**	**P**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**

KEY: **P** = Primary Agency/Organization.
S = Supporting Agency.
C = Coordinating Agency.
A = Alternate Agency.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

A.2.b. ***Each plan shall contain (by reference to specific acts, codes, or statutes) the legal basis for such authorities.***

Explanation

The plan should identify the legal authority to (1) assign lead responsibility for emergency preparedness to a particular State agency, (2) indicate who (e.g., the Governor) may declare a "state of emergency" (or "state of disaster emergency") and what special powers accrue as a result, and (3) delegate responsibility and authority for preparedness and response at the local level. The plan should:

1. Give the citation from the relevant State or local statute(s).

2. Briefly, but thoroughly, summarize the content of the statute(s) with respect to the points indicated above.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

A.3. ***Each plan shall include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones. The agreements shall identify the emergency measures to be provided and the mutually acceptable criteria for their implementation, and specify the arrangements for exchange of information. These agreements may be provided in an appendix to the plan or the plan itself may contain descriptions of these matters and a signature page in the plan may serve to verify the agreements. The signature page format is appropriate for organizations where response functions are covered by laws, regulations or executive orders where separate written agreements are not necessary.***

Explanation

Supporting an emergency response involves a variety of capabilities. The type of support and assistance provided, and from whom, should be answered in a Letter of Agreement (LOA). These agreements may be made with intergovernmental or private-sector providers. Suggestions for cataloging written agreements are identified in FEMA

Guidance Memorandum 5, Revision 1, Technological Hazards, *Agreements Among Governmental Agencies and Private Parties*, October 19, 1983.

The plan or procedures should include a description of current LOAs with each of the organizations/agencies. Copies of the LOAs also should be submitted to FEMA with the plan or when new LOAs are negotiated. The LOAs should contain an explanation of the competency, capabilities, and available resources of the organization.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

A.4. ***Each principal organization shall be capable of continuous (24-hour) operations for a protracted period. The individual in the principal organization who will be responsible for assuring continuity of resources (technical, administrative, and material) shall be specified by title.***

Explanation

Emergency response activities for a commercial nuclear power plant emergency could require response efforts over more than one day. The plan should describe the provisions for maintenance of the following essential emergency functions around the clock: communications, direction and control of operations, alert and notification of the public, accident assessment, information for the public and media, radiological monitoring, protective response, security, transportation resources, and medical and public health support. The plan should identify the individual (by title) responsible for assuring continuity of operations. The plan or associated procedures should contain a roster of at least two shifts of key staff.

The plan should contain the procedures that will ensure continuity of operations despite a change in emergency response personnel. The shift period (e.g., 8 or 12 hours) should be indicated, and the plan should require that the outgoing staff brief the incoming staff on the status of the emergency and the response activities occurring.

The plan or procedures should:

1. Address the means for maintaining 24-hour operations.

2. Reference up-to-date personnel rosters that specify names for a one-for-one replacement of personnel for key staff or positions.

3. Describe the procedures for easing the transition from one shift to the next (e.g., a shift briefing).

4. Specify shift periods (e.g., 8- or 12-hour shifts).

Plan(s) That Should Include This Information

Licensee X State X Local X

2. Planning Standard B – Onsite Emergency Organization (Utilities only)

On-shift facility Licensee responsibilities for emergency response are unambiguously defined; adequate staffing to provide 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 and offsite support and response activities are specified.

(Although there is no requirement for Offsite Response Organizations to evaluate this Planning Standard, it is important that OROs understand the onsite response organization's structure and authority.)

NUREG CRITERION

B.1. ***Each Licensee shall specify the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal staff complement.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.2. ***Each Licensee shall designate an individual as emergency coordinator who shall be on shift at all times and who shall have the authority and responsibility to immediately and unilaterally initiate any emergency actions, including providing protective action recommendations to authorities responsible for implementing offsite emergency measures.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.3. ***Each Licensee shall identify a line of succession for the emergency coordinator position and identify the specific conditions for higher level utility officials assuming this function.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.4. ***Each Licensee shall establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated to other elements of the emergency organization. Among the responsibilities which may not be delegated shall be the decision to notify and to recommend protective actions to authorities responsible for offsite emergency measures.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.5. ***Each Licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 (of NUREG-0654) entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1. The Licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1. The implementation schedule for licensed operators, auxiliary operators, and the shift technical advisor on shift shall be as specified in the July 31, 1980, letter to all power reactor Licensees. Any Deficiencies in the other staffing requirements of Table B-1 must be capable of augmentation within 30 minutes by September 1, 1981, and such Deficiencies must be fully removed by July 1, 1982.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.6. ***Each Licensee shall specify the interfaces between and among the onsite functional areas of emergency activity, Licensee headquarters support, local service support, and State and local government response organizations. This shall be illustrated in a block diagram and shall include the onsite technical support center and the operational support (assembly) center and the Licensee's near-site Emergency Operations Facility (EOF).***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.7. ***Each Licensee shall specify the corporate management, administrative, and technical support personnel who will augment the plant staff as specified in the table entitled "Minimum Staffing Requirements for Nuclear Power Plant Emergencies," (Table B-1) and in the following areas:***

a. Logistics support for emergency personnel, e.g., transportation, communications, temporary quarters, food and water, sanitary facilities in the field, and special equipment and supplies procurement;

b. Technical support for planning and reentry/recovery operations;

c. Management level interface with governmental authorities; and

d. Release of information to news media during an emergency (coordinated with governmental authorities).

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.8. ***Each Licensee shall specify the contractor and private organizations who may be requested to provide technical assistance to and augmentation of the emergency organization.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

B.9. ***Each Licensee shall identify the services to be provided by local agencies for handling emergencies, e.g., police, ambulance, medical, hospital, and fire-fighting organizations shall be specified. The Licensee shall provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan. The agreements shall delineate the authorities, responsibilities, and limits on the actions of the contractor, private organization, and local service support groups.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

3. Planning Standard C – Emergency Response Support and Resources

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 Facility have been made, and other organizations capable of augmenting the planned response have been identified.

NUREG CRITERION

C.1. ***The Federal government maintains in-depth capability to assist Licensees, States, and local governments through the Federal Radiological Monitoring and Assessment Plan (FRMAP), formerly the Radiological Assistance Plan (RAP) and Interagency Radiological Assistance Plan (IRAP)*. Each State and Licensee shall make provisions for incorporating the Federal response capability into its operation plan, including the following*:**

C.1.a. ***Specific persons by title authorized to request Federal assistance; see A.1.d. and A.2.a.***

Explanation

Key officials authorized to request Federal assistance should be identified in the plans and procedures. These persons may be at the State, Tribal, or local level. Federal assistance is provided under the Federal Radiological Emergency Response Plan (FRERP) and the Federal Response Plan (FRP).

The plan or procedures should include a list of key officials authorized to request Federal assistance.

Plan(s) That Should Include This Information

Licensee X State X Local ___

NUREG CRITERION

C.1.b. ***Specific Federal resources expected, including expected times of arrival at specific nuclear facility sites.***

* The Federal Radiological Emergency Response Plan (FRERP), FEMA, May 8, 1996 (61 FR 20944), supercedes these three documents.

Explanation

The planning process should include an assessment of potential shortfalls in resources (equipment, personnel, or facilities), indicate how those requirements can be met using outside resources,[2] and give the expected time required for arrival at each nuclear site.

Therefore, the plans or procedures should include:

1. Information on resources that a State, Tribal, or local government can expect to receive from the Federal government.

2. How long it will take those resources to arrive at the desired location.

Plan(s) That Should Include This Information

Licensee X State X Local ___

NUREG CRITERION

C.1.c. ***Specific Licensee, State, and local resources available to support the Federal response, e.g., airfields, command posts, telephone lines, radio frequencies, and telecommunications centers.***

Explanation

When Federal personnel arrive to assist the State, Tribal, and local governments in the response to an incident, they need access to certain resources, such as clearance into and use of airfields, telephones, and radio communications. In addition, arriving outside personnel need local personnel to provide information on and assistance with the unique features of the area.

The plan or procedures should:

1. Describe facilities that may be made available to Federal response personnel.

2. Indicate the locations of these facilities.

3. Describe the communications equipment and protocols to be used by Federal response personnel.

4. Describe the information and assistance that local personnel will be able to provide Federal response personnel on the unique aspects of the area.

[2] A good information resource for this is *Emergency Response Resources Guide for Nuclear Power Plant Emergencies*, NUREG-1442/FEMA-REP-17, Rev. 1, July 1992.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

C.2.a. ***Each principal offsite organization may dispatch representatives to the Licensee's near-site Emergency Operations Facility (EOF). (State technical analysis representatives at the near-site EOF are preferred.)***

Explanation

During an incident, State, Tribal, and local government organizations may send personnel to act as liaisons at the EOF — typically technical liaisons to coordinate dose assessment and field monitoring activities with Licensee personnel.

The plan or procedures should indicate whether the organization plans to send a representative to the EOF, and if so, which person (by title) would be dispatched.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

C.2.b. ***The Licensee shall prepare for the dispatch of a representative to principal offsite governmental Emergency Operations Centers.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

C.3. ***Each organization shall identify radiological laboratories, their general capabilities, and expected availability to provide radiological monitoring and analyses services that can be used in an emergency.***

Explanation

The plan or procedures should:

1. List the laboratories that are qualified to analyze samples of materials that may have been contaminated with radionuclides.

2. Indicate the radiochemical and analytical capabilities of each laboratory (e.g., for example, the ability to analyze milk and other foodstuffs, soil samples, and water samples).

3. Indicate the number of samples the laboratories would be able to process in a given time period.

4. Include the location and potential availability of the laboratories.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

C.4. ***Each organization shall identify nuclear and other facilities, organizations, or individuals that can be relied upon in an emergency to provide assistance. Such assistance shall be identified and supported by appropriate letters of agreement.***

Explanation

Plans should identify nongovernmental organizations that can be relied upon in an emergency to provide assistance in an emergency, including a description of the expected level of assistance. This assistance should be documented in Letters of Agreement (LOAs).

Examples of assisting organizations include:

- The Licensee;
- Laboratories;
- Transportation providers (e.g., including bus companies, ambulances);
- Various vendors providing resources such as tow trucks;
- Medical facilities (see Criterion L.1. for additional information on LOAs for medical facilities); and
- Various broadcast and other media contacts used for Emergency Alert System (EAS) messages.

The contents of the LOAs should indicate:

- What services will be provided, what organization will provide the service, and who the point of contact is.

- Agreement that the State emergency management agency will provide emergency response training for vehicle operators or other emergency response personnel and, in the event of a radiological emergency, notify the provider of the need for its services;

- Agreement that the provider will supply the vehicles with operators or the services as described for training, drills, exercises, and emergencies;

- Information on the location of the resources to be provided and the 24-hour points of contact for notification and mobilization; and

- Signatures of the parties authorized to execute the LOA and the date. (Note: the LOA should not specify an expiration date or contain a statement that it remains in effect until canceled by one of the parties.)

The plan or procedures should include a list of LOAs with each of the involved organizations/agencies. Copies of the LOAs, and any attachments, should be submitted to FEMA with the plan or when new LOAs are negotiated.

Plan(s) That Should Include This Information

Licensee X State X Local X

4. Planning Standard D – Emergency Classification System

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility Licensee, and State and local response plans call for reliance on information provided by the facility Licensees for determinations of minimum initial offsite response measures.

NUREG CRITERION

D.1. ***An emergency classification and emergency action level scheme as set forth in Appendix 1[3] must be established by the Licensee. The specific instruments, parameters, or equipment status shall be shown for establishing each emergency class in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

D.2. ***The initiating conditions shall include the example conditions found in Appendix 1[3] and all postulated accidents in the Final Safety Analysis Report (FSAR) for the nuclear facility.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

D.3. ***Each State and local organization shall establish an emergency classification and emergency action level scheme consistent with that established by the facility Licensee.***

Explanation

Offsite plans and procedures must incorporate the ECL system used by the Licensee. The purpose of this system is to provide prompt notification of minor events that could lead to more serious consequences. These consequences might be indicative of more serious conditions that are not yet fully realized. The system allows for greater levels of

[3] As modified by *Emergency Planning and Preparedness for Nuclear Power Reactors*, NRC Regulatory Guide 1.101, Rev. 3, August 1992.

response as the seriousness of the event increases. The four ECLs are Notification of Unusual Event (NOUE), Alert, Site Area Emergency (SAE), and General Emergency (GE).

The plan and procedures should:

1. Include reference to the standard ECLs.

2. Acknowledge that the ECL system will form the basis for determining the level of response to a nuclear incident that will be consistent with the Licensee.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

D.4. ***Each State and local organization should have procedures in place that provide for emergency actions to be taken that are consistent with the emergency actions recommended by the nuclear facility Licensee, taking into account local offsite conditions that exist at the time of the emergency.***

Explanation

Appendix 1 to NUREG-0654 describes each ECL,[4] its purpose, example initiating conditions, and the actions to be taken by the Licensee and offsite organizations. For offsite organizations, these are the minimum actions that should be taken, after consideration is given to factors (i.e., weather, road conditions, etc.) at the time of the incident. Planners should be aware that, for a GE, Appendix 1 of NUREG-0654 recommends *sheltering* for a 2-mile radius and 5 miles downwind. However, current FEMA and NRC philosophy is that the preferred protective action for severe reactor (core damage) accidents is to *evacuate* immediately to about 2 miles in all directions from the plant and about 5 miles downwind from the plant, unless other conditions make evacuation dangerous (see NUREG-0654, Supp. 3).

The plan and procedures should provide for implementation of emergency actions to be taken to protect the public, as appropriate for local conditions at the time of the emergency at each ECL (e.g., at SAE, schools will be evacuated; at Alert, primary response centers and EAS stations will be brought to standby status).

[4] Appendix 1 refers to Emergency Action Levels (EALs), rather than Emergency Classification Levels (ECLs). Since the publication of NUREG-0654, EALs have come to be considered *in-plant* conditions that trigger the declaration of various levels of emergencies. These levels of emergencies (of which there are four: Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency) are referred to as ECLs.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

5. Planning Standard E – Notification Methods and Procedures

Procedures have been established for notification by the Licensee of State and local response organizations and for 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 EPZ have been established.

NUREG CRITERION

E.1. ***Each organization shall establish procedures that describe mutually agreeable bases for notification of response organizations consistent with the emergency classification and action level scheme set forth in Appendix 1 [to NUREG 0654/FEMA-REP-1]. These procedures shall include means for verification of messages. The specific details of verification need not be included in the plan.***

Explanation

Onsite and offsite organizations must have a clear and consistent means for providing emergency notification to all responding organizations. Offsite plans or procedures should document the notification procedure by describing the following steps.

1. Initial notification from the Licensee to a designated offsite 24-hour warning point (e.g., a fire or police department dispatch or 911 emergency center). Offsite plans and procedures should indicate the location of the 24-hour warning point, as well as the method of notification (e.g., commercial telephone, dedicated telephone, facsimile, pager) and backups. If the primary means of notification from the Licensee to the offsite warning point is not a dedicated system (one capable of being used by only a known, limited number of organizations), the procedures used by the person receiving the notification should require a return call to verify the authenticity of the notification.

2. The process used to notify all applicable offsite responding organizations once the 24-hour warning point has received and (if necessary) verified the call from the Licensee.

3. The responsibility for notifying all appropriate organizations once the initial notification to the 24-hour warning point has been made. For example, the responsibility of the 24-hour warning point for notifications may end after that organization places a call to the State and county emergency management agencies. A diagram that shows how the notification process works (e.g., call-down) may supplement a plan description.

4. The process used to make subsequent notifications from the Licensee to offsite organizations. (The plan may call for subsequent notifications to be made to a

location other than the 24-hour warning point. For example, after the EOC is operational, the plan may state that all further notifications are to be made directly to the EOC rather than to the 24-hour warning point.)

The criterion states that notification of response organizations should be consistent with Appendix 1 to NUREG-0654. This means that notification information should include the appropriate ECL and that the plan should indicate the person who should be notified at each ECL.

Information that is included in the notification from the Licensee to the offsite 24-hour warning point is usually recorded on a notification form. The plan should contain a copy of this form.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

E.2. ***Each organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel.***

Explanation

In addition to ensuring prompt notification to primary response organizations (NUREG Criterion E.1.), offsite plans and procedures should document the process by which individuals who staff these organizations are alerted, notified, and mobilized in support of the organizations' response roles. The specifics needed to document this process will usually be found in the implementing procedures that accompany each organization's plan.

These plans or procedures should:

1. Indicate who is responsible for notifying each staff member, either by including a notification call list in the procedures or making reference to such a list.

2. Indicate the notifications to be made at each ECL, as well as whether staff are to remain on standby or report to a facility.

3. Indicate the means by which notifications will be accomplished (e.g., pagers, telephones, radios).

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

E.3. ***The Licensee, in conjunction with State and local organizations, shall establish the contents of the initial emergency messages to be sent from the plant. These measures shall contain information about the class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective measures may be necessary.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

E.4. ***Each Licensee shall make provisions for followup messages from the facility to offsite authorities that shall contain the following information if it is known and appropriate:***

a. location of incident and name and telephone number (or communications channel identification) of caller;

b. date/time of incident;

c. class of emergency;

d. type of actual or projected release (airborne, waterborne, surface spill) and estimated duration/impact times;

e. estimate of quantity of radioactive material released or being released and the points and height of releases;

f. chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates;

g. meteorological conditions at appropriate levels (wind speed, direction (to and from), indicator of stability, precipitation, if any);

h. actual or projected dose rates at site boundary; projected integrated dose at site boundary;

i. projected dose rates and integrated dose at the projected peak at 2, 5, and 10 miles, including sector(s) affected;

j. estimate of any surface radioactive contamination in the plant, onsite or offsite;

k. Licensee emergency response actions underway;

l. recommended emergency actions, including protective measures;

m. request for any needed onsite support by offsite organizations; and

n. prognosis for worsening or termination of event based on plant information.

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

E.5. ***State and local government organizations shall establish a system for disseminating to the public appropriate information contained in initial and followup messages received from the Licensee, including the appropriate notification to appropriate broadcast media, e.g., the Emergency Alert System (EAS) (formerly the Emergency Broadcast System [EBS]).***

Explanation

Offsite organization plans should describe the system(s) used to disseminate information to the public. The plan or procedures should:

1. List the broadcast stations and broadcasting systems (including tone alert radios, route alerting, etc.) that are to be used to provide emergency instructions to the public. The station(s) should be able to broadcast official information around the clock, seven days a week, and have a backup power supply with an adequate supply of fuel for continuous operations.

2. Establish procedures and individual responsibilities for each organization and commitments between agreeing parties (e.g., MOUs and/or LOAs) to honor these responsibilities in case of an offsite radiological emergency.

3. Reference or include some form of documentation available for review that reports the station's or broadcast system's ability to participate in the public notification process. The plan should identify (by title) points of contact that are accessible 24 hours a day, 7 days a week. A statement that the station participates in a "Local Emergency Alert System Operational Area Plan" is considered satisfactory.

4. Address the interval for broadcasting official information statements.

5. Provide for the capability to monitor the broadcast of official information messages (radio and television) at the EOC or media center. The plan should specify that if incomplete, inaccurate, or ambiguous information is detected in

the monitored broadcast, (1) a correction will be broadcast as soon as possible, and (2) Public Information Officers (PIOs) and rumor control personnel will be notified of the problem.

6. Establish protocols for broadcasting emergency instructions directly from an EOC through radio and television stations, if this capability is available.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

E.6. ***Each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instruction to the public within the plume exposure pathway EPZ. (See Appendix 3 of NUREG-0654.) It shall be the Licensee's responsibility to demonstrate that such means exist, regardless of who implements this requirement. It shall be the responsibility of the State and local governments to activate such a system.***

Explanation

This criterion addresses the means to alert and notify the public within the plume exposure pathway of a nuclear power plant in a situation involving a radiological hazard. The criterion covers both the administrative procedures and the physical means for notifying the public.

The **administrative procedures** must describe the interaction of the various organizations, as well as the responsibility of each organization involved in the alerting sequence. The description of the **physical means** must address the methods and equipment incorporated for alerting the public.[5]

A description of the **administrative procedures** in the organization's plan should include:

- The title of the organizations or individuals responsible for (1) making the decision to activate the alert and notification system and (2) activating the system. The plan should also specify any alternates necessary to ensure that such organizations or individuals will be notified and mobilized in time to perform their responsibilities.

[5] This criterion requires that the Licensee provide a design report that describes the alert and notification system. This report is reviewed by FEMA for acceptability prior to activating the system and conducting the public telephone survey required by 44 CFR 350.9(a). State, Tribal, and local government officials are expected to incorporate appropriate sections of the offsite radiological emergency response plans (or, at a minimum, an accurate cross-reference to the plans) into the alert and notification system design report submitted by the Licensee. This is in addition to including an appropriate description of the system in their plans.

- A discussion of the alert and notification system activation procedures and an analysis of the amount of time required to implement these procedures. The discussion should demonstrate that, once the designated official has made the decision that the public needs to be notified of the status of the emergency and the possible need for protective actions, the 15-minute design objective (see below) will be met.

- A description of the procedures and safeguards used to ensure that a legitimate and clearly understood command to activate the alert and notification system is sent from the appropriate officials to the persons responsible for physically activating the system, and that these persons recognize, understand, and take appropriate actions in response to such a command.

- A description of the type of public alerting system(s) in use, including the point(s) of activation for (1) system(s) to alert and notify special populations such as the hearing-impaired (e.g., telecommunication devices for the deaf [TDD]) and special needs facilities, and (2) systems used to alert and notify transient populations (e.g., hunters, beach users, and boaters) if any.

- A discussion of how periodic siren testing will be accomplished. The types of tests and suggested frequency are described in Appendix 3, NUREG-0654/FEMA-REP-1, Rev. 1 (page 3-12). They include: a silent test every two weeks (log entry), a growl test quarterly and when preventive maintenance is performed, and a complete cycle test at least annually. The operability of a siren system is considered acceptable when an average of 90% of the sirens can be demonstrated as functional in a given testing period. The results of the siren system tests are to be submitted annually by either the Licensee or the responsible State or local government authority to the applicable FEMA region for review. This information may be submitted as part of the Annual Letter of Certification (see Section IV.A of the manual). The FEMA region is responsible for reviewing these test results to ensure that siren operability remains at or above 90%.[6]

In addition to the administrative procedures in the organization's plan, the primary EAS station should have a set of written procedures that station personnel have been trained to follow when notified of the need to activate the EAS. The organization's plan should acknowledge the existence of these procedures and ensure that they are consistent with the organization's plan.

[6] Routine siren testing procedures and operability requirements are described in FEMA REP-10, Appendix 4.

15-Minute Rule

NUREG-0654 Appendix 3, and FEMA-REP-10 discuss alert and notification system design objectives. The minimum acceptable design objectives for coverage by an alert and notification system are listed below:

- Capability for (1) providing an alert signal and beginning an informational or instructional message to the population on an area-wide basis throughout the 10-mile EPZ, within 15 minutes of the decision by the authorized official that conditions warrant alerting of the public, and (2) providing instructions and protective action recommendations (if appropriate).

- The initial notification system will assure direct coverage of essentially 100% of the population within 5 miles of the site.

- Special arrangements (on a case-by-case basis [see below]) will be made to assure 100% coverage of the population from 5 to 10 miles from the plant who may not have received the initial notification within the entire plume exposure EPZ within 45 minutes.

Alert and notification systems must be capable of providing an alert signal and instructional message within 15 minutes to areas populated by permanent and transient residents within 5 miles of the facility. The requirements include alerting and notifying the transient population in remote rural areas, open water areas, rivers, hunting areas, recreational areas, and other low-population areas that may require special alerting procedures. The same applies for areas from 5 to 10 miles from the facility. However, in extremely rural, low-population areas beyond 5 miles, up to 45 minutes may be allowed for providing an alert signal and instructional message to the permanent and transient populations. Such areas proposed for 45-minute alert and notification status are called exception areas and must be reviewed and approved by FEMA on a case-by-case basis. (Guidance Memorandum AN-1, *FEMA Action to Qualify Alert and Notification Systems Against NUREG-0654/FEMA-REP-1 and FEMA-REP-10*, Attachment 1, provide a detailed interpretation of the FEMA 15-minute rule.)

A discussion of the **physical means** of public notification in the organization's plan should include:

- A description of the system(s) used to provide an alert signal to the public (e.g., fixed sirens, tone alert radios, primary route alerting). If primary route alerting is used in place of a siren system, the plan should describe how route alerting would be performed. The description should include the routes to be traveled, public instructions to be issued, and responsible personnel or organization(s).

- A description of other route alerting systems used. FEMA guidance recognizes two other types of route alerting in addition to primary. **Backup** route alerting is

used if the primary alert system (e.g., sirens) fails to operate. The suggested time for completion of backup route alerting is 45 minutes. **Supplementary** route alerting may be used to complement primary alerting methods. For each applicable type of route alerting, the plan should describe how it would be performed. The description should define the situations in which the route alerting method would be used, the routes to be traveled, public instructions to be issued, and responsible personnel or organization(s).

The organization's plan or procedures should contain:

1. The title of the organizations or individuals responsible for (1) making the decision to activate the alert and notification system and (2) activating the system.

2. A discussion of the alert and notification system activation procedures and of the amount of time required to implement these procedures.

3. A description of the procedures used to activate the alert and notification system and identification of authorized persons responsible for physically activating the system.

4. A description of the type of public alerting system(s) in use, including the point(s) of activation for the system(s) to alert and notify special populations, including the hearing-impaired.

5. A discussion of how the requirements for periodic siren testing will be accomplished.

6. A description of the system(s) used to provide an alert signal to the public, including primary route alerting, if applicable. This description should specify that the system is capable of meeting the 15-minute rule.

7. If appropriate, a description of other route alerting systems (backup and supplementary).

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

E.7. ***Each organization shall provide written messages intended for the public, consistent with the Licensee'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 plans. Such messages should include the appropriate aspects of sheltering, ad hoc respiratory protection, e.g., handkerchief over mouth,[7] thyroid blocking, or evacuation. The role of the Licensee is to provide supporting information for the messages. For ad hoc respiratory protection see "Respiratory Protective Devices Manual" American Industrial Hygiene Association, 1963, pp. 123–126.***

Explanation

This criterion consists of two parts. One involves ensuring that the organization's plan includes the required items. The other involves a review of EAS messages, if applicable to the organization involved. Requirements for both of these parts are discussed below. When reviewing the plan, a complete set of messages should be obtained so that an appropriate analysis may be conducted. When foreign-language messages are required, they should be included in the plan or otherwise provided to the plan reviewer.[8]

If the organization composes messages for distribution to the public, the organization's plan or procedures should:

1. Contain copies of EAS messages (including examples of any that are computer-generated) that would be modified as necessary and sent to the EAS station(s) for broadcast. The messages to be used in an emergency should be analyzed to ensure that:

    - Identification of the State or local government organization and the official with the authority for providing the EAS alert signal and instructional message.

    - Identification of the commercial nuclear power plant, and a statement that an emergency exists at the plant.

    - Reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency.

    - A closing statement asking the affected and potentially affected population to stay tuned for additional information or that the population tune to another station for additional information, such as Special News Broadcasts.

[7] Ad hoc respiratory protection is not generally recommended and should be used with caution.

[8] Messages must be pre-scripted in non-English languages that are spoken by more than 5% (based on current demographic studies) of the EPZ population of voting age.

- The special news broadcasts are supplements to the EAS message and, if not already clearly mentioned in the EAS message(s), should, at a minimum, identify:

  - Precautionary protective actions (if any) for special populations (e.g., school children, transient-dependent individuals) or by location (e.g., public parks, beaches);

  - Any protective actions for the general public described using familiar landmarks (e.g., political jurisdictions, major highways, rivers, railroads, zip codes, etc.);

  - Evacuation routes by affected areas (i.e., local XYZ should use route ABC);

  - Reception centers or locations where monitoring and decontamination activities occur, as well as congregate or mass care centers;

  - Methods to maximize protection when requested to shelter (e.g., remain inside, close all windows and doors, shut off any forced air systems [heating or air-conditioning]);

  - Rumors and the rumor control telephone numbers available to the public, as well as provide appropriate responses;

  - Ingestion-related instructions and information, when applicable; and

  - What evacuees should or should not take along when evacuating (e.g., animals, pet birds).

- If required, arrangements should be made to ensure that the content of foreign-language messages is consistent with the English-language messages. This may be accomplished by having the written foreign language messages translated into English and compared with the text of the original English language messages.

2. The plan should identify which operational mode (e.g., automatic, semiautomatic, or manual override) will be used by each EAS station (e.g., radio, television, cable systems, etc.) for broadcasting the EAS messages. The methodology for EAS message rebroadcast should be indicated in the plan, along with the frequency (how many times and what interval, such as every 15 minutes). The memory capacity of the EAS equipment should be identified for each station.

3. The plan(s) should identify the method to be used in the release of special news broadcasts, such as press releases read over the air, live interviews by station personnel with State or local government officials, as well as live or recorded messages from State and/or local EOCs.

4. Describe the procedure for modifying or selecting pre-scripted (including computer-generated) EAS messages for broadcast.

5. Describe the process of transforming the Protective Action Decisions (PADs) made by responsible authorities into a form that is understandable to the public. The description should include a means of translating the area covered by PADs from the ERPA or sector format used by the Licensee into familiar landmarks and boundaries to be included in the messages.

6. Include a process by which the contents of EAS messages can be adapted to take into account and counter rumors that may have a negative impact on adherence by the public to instructions issued by authorities.

7. Describe the process by which messages are reviewed by a responsible official prior to being released to the EAS station.

8. Describe the process of issuing messages to the EAS station.

9. If required, describe the process of developing and broadcasting messages in a language other than English.

Plan(s) That Should Include This Information

Licensee X State X Local X

6. Planning Standard F – Emergency Communications

Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

NUREG CRITERION

F.1. ***The communication plans for emergencies shall include organizational titles and alternates for both ends of the communication links. Each organization shall establish reliable primary and backup means of communications for Licensees, local, and State response organizations. Such systems should be selected to be compatible with one another.***

F.1.a. ***Each plan shall include provision for 24-hour per day notification to and activation of the State/local emergency response network; and, at a minimum, a telephone link and alternate, including 24-hour per day manning of communications links that initiate emergency response actions.***

Explanation

These criteria address communication systems that are used to activate emergency response organizations when a radiological emergency occurs. Notification of an emergency generally originates with the Licensee and then "fans out" to State and/or Tribal and local governments, who then notify their component agencies and support organizations. In some cases, one governmental unit is responsible for notifying another (e.g., the Licensee notifies the State, and the State notifies the local governments, or a risk county notifies its supporting host county). The plan should describe the communication systems that are used to implement the organization's role in this process, including staff, equipment, and procedures.

The plan or procedures should:

1. Describe the equipment used (e.g., dedicated telephone line or specific radio net) for notification of the organization's personnel and other response organizations. The equipment must include both a telephone link and an alternate means of communication. A diagram depicting communication links is recommended.

2. Describe the system used to ensure 24-hour availability to receive and pass along notifications. The system is generally either a continuously staffed warning point (such as a police dispatch center) or a duty officer system in which the designated duty officer carries a pager.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.1.b. ***Each plan shall include provision for communication with contiguous State/local governments within the EPZs.***

Explanation

The plan should describe the systems (both primary and backup) used to communicate with other governments at the State, Tribal, or local levels, including communications to and from alternate EOCs if appropriate. The particular system(s) available should be identified [e.g., ordinary (switched) commercial telephone, dedicated telephone line, county law enforcement radio net, and National Warning System (NAWAS)].

The following links should be described in the plan or procedures:

1. Each local government should be capable of communicating with all other local governments within the plume EPZ.

2. Each local government should be capable of communicating with any associated host or support counties located outside the plume EPZ.

3. Each State government should be capable of communicating with all of the local governments within its jurisdiction and with other State governments within the ingestion EPZ.

All of the above links should include at least two separate systems, at least one of which should be independent of the switched commercial telephone system.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.1.c. ***Each plan shall include provision for communications, as needed, with Federal emergency response organizations.***

Explanation

In a major radiological emergency, Federal assistance would likely be provided. Federal response could include technical functions (e.g., radiological monitoring, dose assessment, and decontamination), security, and disaster relief functions such as provision of temporary housing, food, medical care, and other services to evacuees. To support and coordinate such efforts, State and/or local governments will have to be able to communicate effectively with Federal emergency response organizations. The particular system(s) that will be used for communication with Federal emergency response organizations should be identified in the plan.

Some plans may provide that some or all communications with Federal response organizations will be relayed through another organization (e.g., a local plan might provide that communications with Federal response organizations will be through the State).

The plan or procedures should describe the system(s) available for communicating with Federal response organizations (e.g., ordinary commercial telephone, dedicated telephone lines, radio nets). The plan should specify the primary system and at least one backup system.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.1.d. ***Each plan shall include provision for communications between the nuclear facility and the Licensee's near-site Emergency Operations Facility, State and local Emergency Operations Centers, and radiological monitoring teams.***

Explanation

Each jurisdiction's plan should describe the systems used to communicate with the Licensee. The particular systems available should be identified (e.g., ordinary commercial telephone, dedicated telephone line, particular radio net). The plan should specify the primary system and at least one backup system for communication with the EOF.

For jurisdictions that deploy radiological monitoring teams in the field, the plan should describe primary and backup systems used to communicate with those teams. In general, the communications system will either be a radio net, cellular telephones, or radios in the vehicles used by the field teams. The teams should generally be able to contact a base when operating within the plume EPZ.[9] The plan should indicate the location of the base and specify what organization operates it.

The plan or procedures should include descriptions of:

1. The primary and backup communication systems that provide links to the EOF; and

2. For jurisdictions that deploy field monitoring teams, the primary and backup communication systems used to communicate with the teams.

[9] Hilly terrain may cause gaps or holes in radio coverage; if present, these gaps should be kept relatively small so that the teams need only drive a few minutes in order to make radio contact.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.1.e. ***Each plan shall include provisions for alerting or activating emergency personnel in each response organization.***

Explanation

The "fan out" process described in F.1.a. will continue to the level of notifying specific personnel. Personnel generally are notified by telephone or pager. For a given jurisdiction, usually one person (e.g., a dispatcher) is responsible for either notifying all personnel or alerting a short list of agency contacts, who in turn alert their agency staff.

The plan or procedures should contain:

1. A general description of how personnel are contacted and notified of a situation and activated (requested to report to their emergency duty station); and

2. One or more procedures with lists of names and phone numbers of personnel to alert or activate, based on the ECL. Such lists may be incorporated by reference; the lists of response staff names and telephone numbers may be withheld from the plans and procedures provided for review, but there should be a reference where this information may be attained (e.g., EOC, county building, dispatch center).

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.1.f. ***Each plan shall include provision for communication by the Licensee with NRC headquarters and NRC Regional Office EOCs and the Licensee's near-site EOF and radiological monitoring team assembly area.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

F.2. ***Each organization shall ensure that a coordinated communication link for fixed and mobile medical support facilities exists.***

Explanation

This criterion is intended to ensure that an effective means of communication has been established among the Licensee, local emergency response organizations, and ambulances and hospitals involved in transportation and treatment of contaminated, injured, or exposed individuals. The Licensee may need to communicate directly with the medical support providers regarding topics such as patient condition, presence and type of contamination or radiation exposure, and procedures for entry to the facility. Similarly, the transport crew should be able to communicate directly with the receiving hospital to provide information such as the patient's condition, estimated exposure, presence of contamination, and estimated time of arrival, or to seek medical advice on patient treatment. Local EOCs should be able to communicate with medical support providers to coordinate pickup of patients, routing of ambulances, and provision of assistance for radiological monitoring.

For all (primary and backup) hospitals and ambulances with a role in the transportation and treatment of contaminated injured individuals, the plan or procedures should include:

1. Identification of a radio link between the ambulance and the designated hospital; and

2. A description of primary and backup (redundant) communications between the hospital, the jurisdiction's EOC, and the Licensee.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

F.3. ***Each organization shall conduct periodic testing of the entire emergency communications system (see Evaluation Criteria H.10. and N.2.a., and Appendix 3).***

Explanation

Periodic testing should be conducted to ensure that emergency communications systems are available when needed. In general, the plan or procedures should describe the test method and period (e.g., monthly, quarterly) for each communication system used for the functions identified in Criteria F.1. and F.2.

Systems used on a routine (daily) basis, such as commercial telephones and law enforcement and fire response radio nets, need not be covered by the periodic testing scheme. Periodic testing should be described for systems that are used less frequently or are limited to emergency use, such as dedicated telephone circuits, emergency-only radio channels, and pagers used for personnel notification. Testing should include any associated electronic or computer equipment (e.g., fax machines, auto-dial equipment, and computers used to store phone numbers).

Minimum frequencies for testing certain communication links are described in Criterion N.2.a.

Plan(s) That Should Include This Information

Licensee X State X Local X

7. Planning Standard G – Public Education and Information

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.

NUREG CRITERION

G.1. ***Each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. This information shall include, but not necessarily be limited to:***

a. educational information on radiation;

b. contact for additional information;

c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs;

d. protective measures related to the ingestion pathway;[10] and

e. special needs of the handicapped.

Means for accomplishing the required dissemination prior to an emergency[10] may include, but are not necessarily limited to information in the telephone book, periodic information in utility bills, postings in public areas, and publications distributed on an annual basis.

Explanation

This criterion addresses written information that is distributed annually to the residents in the plume EPZ. This distribution may take various forms; for example, a brochure, a telephone book insert, or a calendar. For those sites that use a telephone book insert that is not comprehensive, a comprehensive brochure describing all aspects of the potential hazard and emergency response should be published and disseminated within the 10-mile EPZ every three years. The Licensee, State, Tribal, and local government generally coordinate on the content and arrangements for distribution of this material. The party responsible for printing and distributing the material also varies from site to site — it may be the Licensee or a government agency.

[10] Revised by FEMA GM IN-1.

FEMA has issued standards and guidance on the content and format of presentation for these materials, including minimum information to be included, layout, priority of different types of information, target reading level, and other topics. The scope of the material covered below is limited to noting the presence of public information materials, the means of their dissemination, and their consistency with the rest of the plan. A separate review of the public information materials would be made by FEMA using the guidance in Section II.E, "Guide to Preparing Public Information Materials and Emergency Alert System Instructions for Radiological Emergencies".

The plan or procedures should include the following:

1. A description of the means used to disseminate public information. The means described should provide that all residences in the plume EPZ will be covered and that written material will likely be available in a residence during an emergency.

2. A copy of each item (e.g., brochure, calendar, utility bill insert) described in item 1 above should be provided for review along with the plan. Each item provided should be reviewed for accuracy and consistency with the plan. To avoid confusing the public, it is essential that the information in distributed materials match the plan information that will be used to make PADs and compose EAS messages. Therefore, each item should be compared with the other parts of the plan pertaining to protective actions and especially to any pre-scripted material for EAS or tone-alert radio broadcasts. The comparison should include at least the following points:

    - Descriptions and maps of protective action areas;

    - Evacuation routes and relocation centers;

    - Protective measures for schools and day-care centers;

    - Provisions for special populations, including a method for handicapped individuals to contact authorities regarding planning for assistance in the event of an emergency (see Criterion J.10.d.); and

    - Phone numbers for emergency assistance.

3. A brochure containing information about protective actions related to the ingestion pathway (to be distributed when necessary).

4. Foreign-language translations of public information materials must be provided in locales where the number of the foreign minority population of voting age exceeds 5% of a surrounding county's (or equivalent) population.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.2. ***The public information program shall provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material that is likely to be available in a residence during an emergency. Updated information shall be disseminated at least annually. Signs or other measures (e.g., decals, posted notices, or other means placed in hotels, motels, gasoline stations, and phone booths) shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an emergency or accident occurs. Such notices should refer the transient to the telephone directory or other source of local emergency information and guide the visitor to appropriate radio and television frequencies.***

Explanation

Aspects of this criterion pertaining to public information for EPZ residents (e.g., brochure mailings to homes) are covered under Criterion G.1. This criterion should be evaluated with respect to dissemination of public information aimed at transient populations visiting the plume EPZ. The method specified in the criterion is posting of visible information (e.g., signs, decals, notices) in places that are likely to be frequented by transients, such as gas stations, motels, and phone booths. Other such locations might include parks and recreation areas, marinas, shopping malls, and major employers.

The plan or procedures should include:

1. A list of the locations where such information is posted. (Note: such a list will be necessary in order to complete items 2 and 3 below.)

2. A mechanism for annual update of such information. New signs need not be posted every year, provided none of the displayed information has changed. However, there should be an annual procedure for (a) determining whether any of the notices require updating, and (b) if so, replacing old materials with new.

3. Provision for annual audits of locations where information is posted to determine whether it is still there, is still legible, and should be replaced.

4. Copies (or small-scale reproductions) of all postings, decals, etc., used should be furnished for review. Each item should be consistent with the plan and should contain at least the following information:

- Call letters and channels/frequencies of local EAS radio and television stations; and

- A reference to a source for further information, such as an informational brochure or telephone book page.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.3.a. ***Each principal organization shall designate the points of contact and physical locations for use by news media during an emergency.***

Explanation

During a radiological emergency, large numbers of media representatives will congregate in the area seeking information about the emergency and response efforts. To minimize confusion and promote the organized release of information, suitable locations for briefing the media should be designated in advance. At most locations, the Licensee and involved governmental jurisdictions have designated a single facility for joint use. However, contact with the media need not necessarily be limited to the joint facility; a given jurisdiction may send a representative to the joint facility and also provide separate media briefings at its own facility. This criterion addresses physical requirements of a media facility, whether joint or separate.

In addition to face-to-face interactions, each principal organization should have a capability to respond to media inquiries over the telephone. To perform that function effectively on a large scale, a multiline phone setup and a team of personnel must be designated to handle media calls.

The plan or procedures should:

1. Identify the location where the jurisdiction will brief (and otherwise interact with) the media, whether at a joint facility, separate facility, or both. For jurisdictions whose contact with the media is limited to a joint facility operated by another organization, the plan need only identify the joint facility, the organization responsible for that facility, and the method for contacting that organization.

2. For jurisdictions that operate a media facility, a physical description of the facility, including its location and size, and any procedures necessary to activate it for use as a media facility (e.g., coordination with other organizations, installation of equipment, rearranging of furnishings) should be provided. The features listed below are recommended as useful for supporting operations at primary media facilities such as joint information centers or separate media

centers operated by principal jurisdictions (e.g., states, large counties, Tribal organizations, and cities). Jurisdictions with limited resources that perform small-scale media functions at their own facilities (e.g., towns or small municipalities) should provide these features to the extent possible depending on their resources.

- A large briefing room adequate to accommodate expected media;
- Private (media-free) work areas for public information personnel;
- Effective communications systems to enable the PIOs to maintain contact with EOCs and all other relevant response locations;
- Sufficient equipment such as word processors, fax machines, and copiers to support operations;
- Sufficient electrical service to support the surge in demand from computers, lights, cameras, public address systems, radio equipment, etc.;
- Office furniture, equipment, and supplies;
- Adequate parking;
- Telephones for media use;
- Provision for control of access to the facility (e.g., a sign-in desk and ID badges);
- Work area for a public inquiry telephone team; and
- Work area for a media inquiry telephone team.

3. A description of the organization's capability to answer media telephone inquiries. At minimum, the description should include a designated telephone number (that is not given out to the general public) and a designated staff person to answer it. For larger-scale operations at principal jurisdictions, the capability should include a multiline telephone system, a team of personnel to staff it, and a mechanism for ensuring that the team has access to current information about the emergency and response efforts.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.3.b. ***Each Licensee shall provide space that may be used for a limited number of the news media at the near-site EOF.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

G.4.a. ***Each principal organization shall designate a spokesperson who should have access to all necessary information.***

Explanation

To ensure that the news media are used effectively, the role and function of the spokesperson must be defined in advance. This element requires designating a spokesperson for the organization and ensuring that the spokesperson has access to the information necessary to perform his or her job effectively.

Generally, the role of spokesperson is filled by a PIO who is trained and experienced in dealing with the media. Using a specialist for this role also avoids tying up key response officials.

To perform his or her role effectively, the spokesperson must have direct access to the latest official information concerning the emergency and the response efforts. The best access to this information will be found in the EOC. If the spokesperson is positioned at another location (such as a joint information center), a mechanism must be developed for forwarding key information from the EOC to the spokesperson and allowing the spokesperson to question response officials at the EOC for answers to specific questions.

Many organizations establish formal control mechanisms on the release of information; for example, a procedure requiring that information be approved by a responsible official before being released. Such mechanisms help control the reliability of the information released. The organizations may also have certain policies regarding the release of sensitive information (e.g., information about injuries to individuals).

The plan or procedures should include the following specific information:

1. Who (what position) will serve as the main spokesperson for the organization and where the spokesperson will be located. If media interaction is planned for more than one location, a main spokesperson should be designated for each location.

2. The plan should describe how the spokesperson will obtain access to information about the emergency and the organization's response efforts. If the spokesperson will be operating at a location that is remote from the EOC, the plan should describe:

   - Who (what position) will be the main point of contact in the EOC for exchanging information with the spokesperson.

   - What physical means (e.g., telephone, faxes, computer networks) will be used for communication of information between the EOC and the spokesperson.

3. The plan should describe the procedure (if any) for authorizing release of information.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.4.b. ***Each organization shall establish arrangements for timely exchange of information among designated spokespersons.***

Explanation

Exchange of information among spokespersons for different organizations is necessary to ensure that information released to the public is accurate and consistent. Information may be exchanged verbally, either face-to-face or by telephone, and/or by hard-copy press releases. The goals of accuracy and consistency are best served if information is exchanged and discussed with other spokespersons prior to its release; however, if that is not possible, exchange after release is acceptable.

The plan should describe the following:

1. If information is provided to the media primarily through a joint facility (i.e., the joint facility is the only location where a spokesperson is assigned), the plan should include a procedure for exchange of information at that facility (e.g., regular conferences and circulation of press releases among the spokespersons).

2. If the jurisdiction has a spokesperson at a separate facility, in addition to or instead of the joint facility, the plan should include equipment and procedures for rapidly exchanging information with other spokespersons, including:

   - Who (what position) is responsible for ensuring that the exchange takes place; and

- What physical communication means (e.g., telephone, faxes, computer networks) will be used.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.4.c. ***Each organization shall establish coordinated arrangements for dealing with rumors.***

Explanation

An effective public inquiries program serves two purposes. First, it provides information and assistance to the public on a one-on-one basis. Second, it serves as a feedback mechanism for public information. Patterns or trends in public inquiries may indicate the presence of unconfirmed reports, rumors, or misinformation that should be addressed in news releases and briefings.

Plans or procedures for responding to public inquiries should describe the following:

1. Capability to receive and effectively respond to numerous simultaneous telephone calls from the general public and respond to questions, requests, or comments posed by residents. Telephones and staff should be designated for a public inquiries center. The plan should state at what point the public inquiries center will be activated and who (by title) will be responsible for the staffing and operation of the center. The plan should also describe the mechanism to provide the staff with current information about the emergency and response efforts.

2. Procedures for the public inquiry staff should instruct the staff to be alert for patterns or trends in the inquiries that indicate the presence of unconfirmed reports, rumors, misinformation, or confusion; such indications should be reported to the PIOs/Public Affairs Officers (PAOs) for clarification.

3. The plan should provide for publicizing the telephone number(s) for public inquiries promptly via the EAS and/or media information so that the public knows what number to call for information. The telephone number(s) for media inquiries should be separate from the numbers for other emergency telephone traffic, so that lines used by EOC staff are not tied up.

   Note: At many locations, the public inquiries program is conducted as a joint operation (often co-located with the joint information center) or by one principal organization on behalf of all the EPZ organizations. If the jurisdiction whose plan is being reviewed sends a delegate to a joint program or simply relies on another organization to answer public inquiries, the plan need only

identify what organization provides or coordinates the public inquiries program and the method for contacting that organization.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

G.5. ***Each organization shall conduct coordinated programs at least annually to acquaint news media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.***

Explanation

This criterion is intended to provide a baseline of information about REP to the local media. The purpose of providing such a baseline is to prepare local media for their potential role as conduits of emergency information and to promote accurate and objective reporting concerning radiological emergencies.

The plan should provide for the following:

1. An annual briefing, workshop, mailing, or other means of providing information to news media, covering the following topics:

   - Emergency plans, including organizational roles and authorities, ECLs, and protective actions;

   - Points of contact and locations for release of public information during an emergency, including media center locations and telephone numbers for media inquiries; and

   - General information concerning radiation exposure and health effects.

2. Distribution of written materials (media kits) covering these topics. The materials themselves need not be included in the plan or provided for review.

Plan(s) That Should Include This Information

Licensee X State X Local X

8. Planning Standard H – Emergency Facilities and Equipment

Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

NUREG CRITERION

H.1. ***Each Licensee shall establish a Technical Support Center and an onsite operations support center (assembly area) in accordance with NUREG-0696.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.2. ***Each Licensee shall establish an EOF from which evaluation and coordination of all Licensee activities related to an emergency is to be carried out and from which the Licensee shall provide information to Federal, State, and local authorities responding to radiological emergencies in accordance with NUREG-0696 1.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.3. ***Each organization shall establish an Emergency Operations Center for use in directing and controlling response functions.***

Explanation

State, Tribal, and local plans should provide the location of the EOC that will be used for directing and controlling emergency response functions. Plans should also include an EOC layout diagram. Facility equipment (e.g., telephones, displays, copies, facsimile, and computer/word processors) should be listed in plans if needed to support operations. Source(s) of backup power (if available at an EOC) should be discussed in the organization's plan. Plans should also state that access to the facility is limited to those individuals who have functional responsibilities required for EOC operations.

If there is an alternate EOC, the plan should identify its location. It is recommended that the plans include the layout diagram of the alternate EOC, if applicable, along with the facility equipment. See Criterion F.1.b. for a discussion of alternate EOC

communication links. The plan should identify the organization and official (by title) who is responsible for maintaining the operational readiness of the EOC.

The plan or procedures should describe:

1. The location and layout of the EOC;

2. A listing of facility equipment necessary to support operations;

3. The EOC's backup power capability, if available;

4. Details and methods for access control to the facility;

5. The location of the alternate EOC, if applicable; and

6. The organization and official (by title) that is responsible for maintaining the operational readiness of the EOC.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

H.4. ***Each organization shall provide for timely activation and staffing of the facilities and centers described in the plan.***

Explanation

Plans should adequately document procedures for the timely activation and staffing of any facilities (e.g., EOCs, reception/mass care centers, and monitoring and decontamination stations) required to support emergency response and specify how these facilities would be set up. Plans should address the timing of facility activation (i.e., at the same time as initial emergency personnel notification or at a specific ECL). Plans should list specific criteria that would be used to declare a facility operational. These criteria might include completion of the physical setup of the facility, the presence of specific emergency staff at the facility, setup of key communication links, or a combination of these conditions.

The plans should also identify, in an appendix, staff members (by position) assigned to each facility and reference rosters of key personnel (those essential to support EOC operations), along with the number of personnel needed to support operations in each role or position. Plans should also contain information on methods used to alert emergency staff.

The plans or procedures should include:

1. Detailed procedures for the activation and staffing of all emergency facilities;

2. Criteria used for declaring facilities operational; and

3. A list of staff (by position) assigned to each facility and reference rosters of key personnel.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

H.5. ***Each Licensee shall identify and establish onsite monitoring systems that are to be used to initiate emergency measures in accordance with Appendix 1, as well as those to be used for conducting assessment.***

The equipment shall include:

a. geophysical phenomena monitors (e.g., meteorological, hydrologic, seismic);

b. radiological monitors (e.g., process, area, emergency, effluent, and wound, and portable monitors and sampling equipment);

c. process monitors (e.g., reactor coolant system pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and

d. fire and combustion products detectors.

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.6. ***Each Licensee shall make provision to acquire data from or for emergency access to offsite monitoring and analysis equipment, including:***

a. geophysical phenomena monitors (e.g., meteorological, hydrologic, seismic);

b. radiological monitors, including rate meters and sampling devices. Dosimetry shall be provided and shall meet, as a minimum, the NRC Radiological Assessment

Branch Technical Position for the Environmental Radiological Monitoring Program; and

c. laboratory facilities, fixed or mobile.

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.7. ***Each organization, where appropriate, shall provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.***

Explanation

Plans should identify any offsite radiological monitoring equipment that is located or stored in the vicinity of the nuclear facility (e.g., at staging areas, forward command posts, the EOF) and monitoring equipment that will be brought to the vicinity by the State, Tribal, or local government. The plan should include a written description of the type and quantity of equipment available at each location. If radiation detectors, thermoluminescent dosimeters (TLDs), and/or air sampling pumps at fixed stations are located in the vicinity of the nuclear facility, the plan should identify them as potential resources and include written descriptions and maps of the fixed stations.

The plan or procedures should describe:

1. Radiological monitoring equipment (by type and number) that is located or stored in the vicinity of the nuclear facility or that will be brought in by the State, Tribal, or local government; and

2. Fixed radiological monitoring stations in the vicinity of the nuclear facility.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

H.8. ***Each Licensee shall provide meteorological instrumentation and procedures that satisfy the criteria in Appendix 2 and provisions to obtain representative current meteorological information from other sources.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.9. ***Each Licensee shall provide for an onsite operations support center (assembly area) that shall have adequate capacity and supplies, including, for example, respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, cameras, and communications equipment for personnel present in the assembly area.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

H.10. ***Each organization shall make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use. There shall be sufficient reserves of instruments/equipment to replace those that are removed from emergency kits for calibration or repair. Calibration of equipment shall be at intervals recommended by the supplier of the equipment.***

Explanation

Plans or procedures should state which organization(s) are responsible for the maintenance of radiological equipment, including inventory, inspections, calibration, and operational checks. The following equipment types should be discussed, as appropriate, in the plans:

1. ***Dosimetry***. Dosimetry (including DRDs and non-DRDs) used by emergency workers should be listed in the plans. The list of equipment should include quantities of items required (based on the number of emergency workers), quantities of equipment available (by type and model), and information regarding backup equipment (i.e., how many items are available by type [model] and where they are stored). Also, if dosimetry will be provided from remote locations, the plan should describe the procedures for obtaining the

equipment, including what organization will supply the equipment, how much equipment is available, and the estimated arrival time of the equipment.

Plans should include procedures for checking DRDs before operation. Emergency workers should check dosimeters for initial readings and re-zero them, if necessary. Plans should include information about non-DRDs (e.g., film badges, TLDs), including where the non-DRDs would be turned in for processing and procedures for handling and storing control badges. Plans should address the procedures and frequency for the inspection (i.e., checks for electrical leakage and calibration) of DRDs. New types of dosimeters (e.g., electronic) may be used; recommended manufacturers instructions should be followed.

2. ***Portal Monitors***. Inventory information regarding portal monitors (if they are to be used) should be included in the plan. The plan or an appropriate standard operating procedure (SOP) should include a list of equipment containing models, types, quantities, and locations. The plan should also include information regarding backup equipment (i.e., how many items are available by type [e.g., model] and where they are stored) as well as backup electrical power for those without an independent backup power supply.

   Plans should discuss procedures for operational checks of portal monitors, the method used for such checks (e.g., electrical operational check and radioactive check source), and the frequency at which operational checks are to be completed. Portal monitor operational checks should be completed prior to initial use and in the field before operation in accordance with guidance in the *Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response* (March 1995). The plan should indicate that each monitor will be labeled with the date of the last operational check or the date of the next calibration check.

3. ***Radiological Survey Instruments***. Radiological survey instruments used by field monitoring teams should be listed in the plan separately from those used by emergency workers at reception centers. The lists of equipment should include quantities of instruments required (based on the number of field monitoring teams and reception center requirements) and quantities of instruments available (by model). The plans should include information regarding backup equipment (i.e., how many items are available by type [model] and where they are stored).

   Plans should discuss procedures for operational checks of radiological survey instruments, the method used for such checks (e.g., battery checks, radioactive source checks) and the frequency at which operational checks will be completed. (Operational checks should be completed on a quarterly basis and before deployment into the field.) Frequency of instrument calibration should

be stated in the plan and should be performed at least annually unless specified otherwise by the manufacturer.

4. ***Air Sampling Pumps***. An inventory of air sampling pumps should be included in the plan. This information should be listed in the plan prepared by the organization that has the responsibility for air sampling. A list of equipment including, model types and numbers, and storage location(s), should be included in the plan or appropriate SOP. The plans should provide information regarding backup equipment (i.e., how much is available and where it is stored) and identify the source of power needed to drive the pumps.

   Plans should discuss procedures for operational checks of air sampling pumps and the method used for such checks. Operational checks of air sampling pumps should be completed quarterly and before field monitoring teams are deployed into the field. The plan should also provide for calibration of air sampling pumps at least annually.

5. ***Laboratory Equipment***. Inventory information regarding laboratory equipment should be included in the plan. This information should be listed in the plan prepared by the organization that has the responsibility for laboratory analysis. A list of equipment, including types (e.g., gamma spectrum, liquid scintillation), by model, should be included in the plan or appropriate SOP. If backup equipment is provided by another laboratory, the plan should include the name of the laboratory and a summary of its capabilities. Plans should discuss methods and frequency of calibration for all types of laboratory equipment being used.

The plan or procedures should describe:

1. The organization(s) responsible for the maintenance of all radiological equipment; and

2. Specifics regarding the inventory, operational checks, and calibration for dosimetry, portal monitors, radiological survey equipment, air sampling pumps, and laboratory equipment.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

H.11. ***Each plan shall, in an appendix, include identification of emergency kits by general category (protective equipment, communications equipment, radiological monitoring equipment, and emergency supplies).***

Explanation

The number of emergency kits (as described in the criterion) and the quantity of each individual item per kit should be identified in the plan to ensure that a sufficient supply is available. Protective equipment refers essentially to protective clothing (e.g., booties, gloves, coveralls, rain suits, helmets). Communications equipment includes hand-held (field) radios, cellular telephones, and any communications equipment that is essential for field operations. Radiological monitoring equipment includes the equipment discussed in Criterion I.8. Emergency supplies include any type of equipment that might be necessary for emergency response (e.g., barricades, plastic cones, flashlights).

The plan or procedures should describe:

1. The number and contents of emergency kits by location and general category, and

2. The quantity of each individual item per kit.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

H.12. **Each organization shall establish a central point (preferably associated with the Licensee's near-site EOF) for receipt and analysis of all field monitoring data and coordination of sample media.**

Explanation

Plans should identify the organization(s) responsible for the assessment of radiological data. The plan should identify the central point for the compilation and analysis of all field monitoring data, describe the procedures used by field monitoring teams to relay information to the central point, and discuss the means by which it is processed (e.g., computer model). Plans should also address the coordination and analysis of sample media and describe the procedures for transporting samples, including identification of (1) laboratories involved, (2) predetermined transfer points (if used), and (3) person responsible for deciding which samples are sent to which laboratory.

The plan should also describe the method used for analyzing the data and transferring the data from the laboratory to the central point.

The plan or procedures should describe:

1. The organization responsible for the assessment of radiological data;

2. The location of the central point for the compilation and analysis of all field monitoring data, including the means used by field monitoring teams to relay information to the central point; and

3. The coordination and analysis of sample media, including transporting samples and the method used for transferring the data from the laboratory to the central point.

Plan(s) That Should Include This Information

Licensee X State X Local X

9. Planning Standard I — Accident Assessment

Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

NUREG CRITERION

I.1. ***Each Licensee shall identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents and shall identify the plant parameter values or other information that correspond to the example initiating conditions of Appendix 1. Such parameter values and the corresponding emergency class shall be included in the appropriate facility emergency procedures. Facility emergency procedures shall specify the kinds of instruments being used and their capabilities.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.2. ***Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident shall include post-accident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring in accordance with NUREG-0578,[11] as elaborated in the NRC letter to all power reactor Licensees dated October 30, 1979.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.3. ***Each Licensee shall establish methods and techniques to be used for determining:***

a. The source term of releases of radioactive material within plant systems. An example is the relationship between the containment radiation monitor(s) reading(s) and radioactive material available for release from containment.

b. The magnitude of the release of radioactive materials based on plant system parameters and effluent monitors.

[11] Superseded by *Clarification of TMI Action Plan Requirements,* November 1980, and Supplement 1 to NUREG-0737, January 1983.

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.4. ***Each Licensee shall establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.5. ***Each Licensee shall have the capability of acquiring and evaluating meteorological information sufficient to meet the criteria of Appendix 2. There shall be provisions for access to meteorological information by at least the near-site EOF, the Technical Support Center, the Control Room and an offsite NRC center. The Licensee shall make available to the State suitable meteorological data processing interconnections that will permit independent analysis of facility-generated data by the State in those States with the resources to effectively use this information.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.6. ***Each Licensee shall establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment is off-scale or inoperable.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

I.7. ***Each organization shall describe the capability and resources for field monitoring within the plume exposure EPZ that are an intrinsic part of the concept of operations for the facility.***

The plan should identify what organizations will contribute to the field monitoring effort, including the number of field teams per shift and specific functions of each team (e.g., ambient monitoring, field sampling). The plans should identify arrangements for the timely exchange of field measurement data and the coordination of monitoring activities. If outside field monitoring team resources (e.g., Licensee) are to be used, LOAs need to be established with the appropriate resources as required by Criterion C.4. The activities to be performed by these outside teams, such as collection of air samples within the plume and the determination of the airborne radioiodine concentrations present, should be clearly delineated in the plan and in the LOAs.

The plan and procedures should describe:

1. Who has the primary responsibility for field monitoring activities; and

2. What capability and resources State, Tribal, and local organizations will contribute.

Plan(s) That Should Include This Information[12]

Licensee X State X Local X

NUREG CRITERION

I.8. ***Each organization, where appropriate, shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways. This shall include activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.***

Explanation

1. ***Activation and Notification*.** The plan should describe the activation process, including identification of the organization that will receive the initial information requiring the activation of field teams and the designated ECL at which the field teams will be mobilized or deployed. Field teams may be activated at a different time than individuals at EOCs. An individual should be designated, by title, within the organization to receive this information. The means of notification should be clearly specified in the plan and procedures (e.g., pager, telephone calls). In

[12] In most instances, responsibility for this criterion is assigned to only one offsite jurisdiction, either State or local.

addition to the physical means to be used in contacting personnel, the plan should indicate the person (by title) who will be responsible for contacting personnel and describe the details of the notification process (e.g., telephone tree, multiline automatic ringdown system). The plans should also contain the list of personnel, including alternates, that need to be contacted for field monitoring team activities as well as whether repeat attempts to reach those who do not initially respond will be made, or if alternates will be used.

2. ***Field Team Composition.*** The plan should identify the number and composition (e.g., a health physicist or health physics technician, a driver who is a nontechnical local person familiar with the area) of the teams to be deployed for field monitoring and sampling. For field teams that are composed of a mixture of government organization representatives and outside resources such as Licensee or private (e.g., university, contractor, mutual-aid) representatives, the plan should provide LOAs.

3. ***Transportation.*** The plan should identify types and sources of vehicles to be provided for the field teams. Means of transportation should be appropriate for the assignment to be carried out (e.g., four-wheel drive vehicles or boats where needed to reach monitoring or sampling locations). Transportation resources should be of sufficient size to carry all supplies, equipment, and personnel required to support the field monitoring operation.

4. ***Estimated Deployment Times.*** The plan should identify the time required for teams to reach their first assigned monitoring point near the reactor site once activated. Plans should also identify any staging areas near each reactor site that will be used as the initial deployment point for the teams.

5. ***Communications.*** The plans should indicate what equipment (e.g., radios, cellular telephones) the field teams will use to communicate with their base, with each other, and with field team support personnel (i.e., sample couriers). The plan should also address how these communications would be accomplished if the primary communications system fails.

6. ***Direction of Field Teams.*** Plans and procedures should identify how the field teams will be directed and coordinated; including who (by title) is responsible for coordination and from where it will occur. The plan should specify the decision-making process that will be used for the placement and movement of teams, including procedures for determining the locations, within the plume pathway, that will be suitable for collecting air samples by taking open- and closed-window ambient exposure rate measurements. It is preferable that State or local teams traverse the plume to obtain peak and plume-edge measurements, but only at locations where the turn-back exposure values will not be exceeded. The sampling strategy adopted should be incorporated in the plan. In addition, the plans should address whether coordination of field teams will occur with other teams also in the field (e.g., local, Licensee) and whether measurement data will be shared.

The locations of predetermined field monitoring points should be included in the plan or in procedures that are referenced in the plan. The plan should include the use of *ad hoc* monitoring points during an incident. The plan should also address how the teams will be directed to those points (e.g., use of familiar landmarks).

7. ***Field Monitoring Equipment.*** The plan should contain a list of monitoring and sampling equipment to be used by the field teams, including the following:

   a. *Ambient Monitoring Equipment*

      - Low-Range Survey Meters — Capable of making both gamma and beta-plus gamma readings; the upper limit of the gamma range should be in the tens of mR/hr.

      - High-Range Survey Meters — The high range instrument should overlap the low range instrument and have an upper limit of the gamma range capable of measuring the exposure rate limit defined in the plan. If not exposure rate limit is defined, an instrument capable of measuring in the tens of R/hr is generally adequate.

   b. *Air Sampling Equipment*

      - Air Pump — Calibrated as to flow rate and capable of being operated by power supplied by the transportation vehicle or other portable electrical source; capable of providing a sampling flow rate compatible with the type of adsorbent cartridge being used (typically 2 cubic feet per minute [cfm] or 5 cfm, depending on adsorbent cartridge geometry).

      - Cartridges — Silver zeolite, silver alumina, or silver silica gel.

      - Particulate Filters — HEPA or equivalent.

      - Miscellaneous Supplies — Tweezers, plastic bags, gloves, markers, labels, etc.

      - Counting Equipment — Count rate meter or scaler capable of processing data from a suitable radiation detection probe. Probe selection will depend on adsorbent geometry.

   c. *Environmental Media Sampling Equipment*

      - Collection Equipment — Shovel or trowel, shears or other cutting devices, bucket or bottles for liquid samples, and distance measuring device.

      - Monitoring Instrument — Micro R meter and/or count rate meter with thin window Geiger-Mueller (G-M) probe.

- Miscellaneous Supplies — Plastic bags, gloves, shoe covers, markers, labels, etc.

8. ***Field Team Procedures.*** The plan (and/or procedures) should describe the methods for monitoring, collecting, and analyzing samples.

   a. *Equipment Checks:* Prior to using an instrument(s) for monitoring, the team members should verify that calibration stickers are current and then check the instrument(s) for proper operation. Operational checks would involve checking the battery status, and for a low-range instrument, measuring the radiation from an accompanying check-source, and comparing the results with the proper reading for the source that has been stated on the label attached to the instrument(s) at the time of calibration.

   b. *Communication Protocols:* The plan should emphasize the need for providing clear communication of the units used for measured values and for clear indication of where and when the measurements were made and by whom.

   c. *Ambient Radiation Measurements:* The procedures should state that open- and closed-window readings should be taken at waist level (approximately 1 meter) or higher and at near-ground levels (e.g., 5 – 7 centimeters), and that the beta window on the instrument's probe, when conducting open-window readings, should point up for waist level (or higher) readings and down for near-ground readings.

   d. *Air Sampling Procedures:* These procedures should describe air sampling techniques in detail. If the radiological release is a particulate release, the procedures should indicate that the number of air samples required may be increased to clearly define the particulate distribution within the plume. For example:

      - Sampling Locations — The procedures should stipulate how to choose suitable location(s) to collect an air sample. Although some of the air samples would preferably be collected near a peak exposure rate reading acquired while traversing the plume, any location where the exposure rate is 20 mR/h or greater is considered acceptable. Additional samples should be taken at other locations, including areas near the plume edge.

      - Monitoring — During the sampling period, waist level (or higher) ambient radiation readings should be taken at the beginning, middle, and end.

      - Flow Rate — The flow rate and total volume collected should be appropriate for the collection and analytical system adopted to assure capability to detect 10^{-7} microCuries per cubic centimeter (μCi/cc) of radioiodine.

- Cartridge/Filter — The type of cartridge and particulate filter to be used should be noted.

- Counting — Counting procedures for field measurements should be noted, such as:

  – Traveling to a low background area,
  – Obtaining gross count or using a single-channel analyzer,
  – Counting the cartridge and particle filter, and
  – Using reproducible geometry when measurements are taken.

- Bagging/Labeling — Methods should be described for bagging and labeling samples, including a chain-of-custody form and the information that will be provided on the label (e.g., location, time, date, sample [or ambient] exposure rate, name of collector).

- Transfer — The method should be included for transfer and dispatch of samples to the laboratory for isotopic analysis of particulates and for radionuclides, especially if only gross measurements were taken on the cartridge.

e. Environmental Sampling Procedures: Procedures for collecting samples to support both ingestion and relocation decisions should describe the following:

   - The media to be sampled;

   - Methods for obtaining samples (e.g., tools to use, size of the sampling area, weight or volume of samples collected);

   - Methods for bagging and labeling samples, including a chain-of-custody form;

   - Information to be included on labels;

   - Methods for determining sampling locations (e.g., exposure rates); and

   - Methods to prevent cross contamination.

   Samples taken to support the relocation decision should also include the following:

   - Size of the area from which the sample was taken and procedures for selecting sampling locations (e.g., exposure rates);
   - Transfer and dispatch of samples to the laboratory; and

   - An ambient radiation exposure rate (which should be taken for each sample and recorded on the sample's label).

9. ***Laboratories.*** The plan should indicate the laboratory(ies) to which specific samples will be sent. The capability of each laboratory to analyze various radioisotopes is addressed in Criterion C.3. In addition, the procedures should describe the arrangements for transporting samples and temporary storage of samples when needed. The plan should clearly identify the estimated time required to transport collected air samples to the designated laboratory, perform the required analyses, and transmit the results to the appropriate location (e.g., dose assessment group). Transportation of plume phase samples to the laboratory should be completed within 4 hours. Finally, the procedures should indicate the capability to insure the security and integrity of collected samples through documentation and maintenance of the "chain-of-custody" forms.

   If the procedures indicate that a mobile laboratory will be readily available, equipped with appropriate counting equipment, and able to provide rapid analyses of air samples for airborne radioiodine and particulates, the mobile laboratory can be used in lieu of having portable instruments for the field team to perform an early assessment. The placement of the mobile laboratories at pre-designated staging areas should be indicated in the plans, if applicable. In addition, if the plan states that additional private laboratories will be used in support of the State in sample analysis or that the Licensee's laboratory will be used, appropriate LOAs should be referenced in the plan, as required by Criterion C.4.

10. ***Radiological Exposure Control.*** The plan should identify the requirements for field team members' radiological exposure control (see Planning Standard K).

The plan and procedures should describe:

1. The activation process and means of notification of field teams;

2. The composition of the field monitoring teams (e.g., organizations involved, number of teams that will be deployed, and number of members on each team);

3. The types and sources of transportation resource(s) for field teams and estimated deployment times to reach a site from various locations, if applicable;

4. The location of any staging areas that are planned for use;

5. The title of the person who is responsible for directing field teams to proper locations for monitoring and air sampling;

6. The monitoring, sampling, and communications equipment that will be used by field teams;

7. The procedures that will be followed for field monitoring, sample collection, and field sample analysis.

8. The laboratories to which specific samples will be sent for analysis, including estimated delivery and analysis times, transportation and temporary storage arrangements, and procedures for chain-of-custody records.

Plan(s) That Should Include This Information[13]

Licensee X State X Local X

NUREG CRITERION

I.9. ***Each organization shall have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} μCi/cc under field conditions. Interference from the presence of noble gas and background radiation shall not decrease the stated minimum detectable activity.***

Explanation

Early determination of thyroid dose will be needed. Some procedures call for field measurements using portable instrumentation. An activity level of about 10^{-7} μCi/cc of radioiodine is required to make a thyroid dose calculation. The procedures should allow for the collection of sufficient quantities of radioiodine in a reasonable sampling time to permit field measurement in the presence of noble gases. This limitation should not be a problem for organizations that incorporate mobile field laboratories for these analyses because the laboratories have equipment with greater sensitivities. The plan should also state that interference from the presence of noble gas and background radiation shall not decrease the stated minimum detectable activity. (Note: See Criterion I.8. for field monitoring and sampling procedures and equipment.)

The plan and procedures should describe:

1. The capability to collect air samples within the plume and perform analysis that will detect radioiodine concentrations as low as 10^{-7} μCi/cc under field conditions; and

2. The process used for collecting air samples, including location of sampling points, timing of sample collection, techniques used to collect and count, etc. (see Criterion I.8).

Plan(s) That Should Include This Information[14]

Licensee X State X Local X

[13] In most instances, responsibility for this criterion is assigned to only one offsite jurisdiction, either State or local.
[14] In most instances, responsibility for this criterion is assigned to only one offsite jurisdiction, either State or local.

NUREG CRITERION

I.10. ***Each organization shall establish means for relating the various measured parameters (e.g., contamination levels, water, and air activity levels) to dose rates for key isotopes (i.e., those given in Table 3, page 18) and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the Protective Action Guides. The detailed provisions shall be described in separate procedures.***

Explanation

The plan and procedures for the State and for local governments, if applicable, should describe the processes that will be used to estimate actual or potential doses to the public in terms that may be compared with PAGs. The plan and procedures should also identify that there are three PAGs: Plume or Emergency Phase, Ingestion, and Relocation.

The following points should be addressed for each of the three PAGs:

1. Personnel and equipment that will be involved in dose assessment;

2. Computer software and documentation (including data input procedures) that will be used;

3. Alternate methods that may be used (e.g., hand calculations);

4. Information (variables) that must be obtained in order to run the model, including proper units of measure;

5. Means for obtaining initial information (e.g., from Licensee monitors or inventory estimates);

6. Use of field data to verify and to modify model results; and

7. Procedures for comparing dose results with those of other organizations that perform dose assessment.

Plan(s) That Should Include This Information[15]

Licensee X State X Local X

[15] In most instances, responsibility for this criterion is assigned to only one offsite jurisdiction, either State or local.

NUREG CRITERION

I.11. ***Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.***

Explanation

The plan and procedures to be used by field monitoring teams to perform plume monitoring are described in detail under Criterion I.8. If the State plans to track and define only the outer edges of the plume, arrangements should be made (and referenced in the plan) for the use of outside resources to take measurements and collect air samples from peak exposure rate areas near the plume's peak concentration; for example, organizations may rely on the Licensee's or private (e.g., university, contractor, mutual-aid) field team data. These arrangements require the establishment of an LOA.

The plan and procedures should describe:

1. The planned use of any outside resources to locate and track the plume, including taking measurements and collecting air samples from or near the plume's peak concentration, if applicable.

Plan(s) That Should Include This Information

Licensee ___ State X Local ___

10. Planning Standard J — Protective Response

A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate (66 FR 5427). 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.

NUREG CRITERION

J.1. ***Each Licensee shall establish the means and time required to warn or advise onsite individuals and individuals who may be in areas controlled by the operator, including:***

a. employees not having emergency assignments;

b. visitors;

c. contractor and construction personnel; and

d. other persons who may be in the public access areas on or passing through the site or within the owner-controlled area.

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.2. ***Each Licensee shall make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density, and specific radiological conditions.***

Explanation

The plans should describe how assistance will be provided to Licensees by Offsite Response Organizations (e.g., local or state police) in managing the flow of traffic from the nuclear power plant in cases when the Licensee evacuates a large number of onsite personnel (more than 2,000) in a short period of time. In addition, the plans should consider the means for addressing conditions such as inclement weather and/or high traffic density. Provisions for coordinating arrangements with other offsite organizations to expedite the evacuation of onsite personnel should also be described.

The plan should describe:

1. Assistance that will be provided to Licensees during an evacuation of the site;
2. The alternatives that will be implemented during inclement weather and/or high traffic densities; and

3. Provisions for coordinating arrangements with other offsite organizations to expedite evacuation of onsite personnel.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

J.3. ***Each Licensee shall provide for radiological monitoring of people evacuated from the site.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.4. ***Each Licensee shall provide for the evacuation of onsite nonessential personnel in the event of a Site or General Emergency and shall provide a decontamination capability at or near the monitoring point specified in J.3.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.5. ***Each Licensee shall provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.6. ***Each Licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:***

a. individual respiratory protection;

b. use of protective clothing; and

c. use of radioprotective drugs (e.g., individual thyroid protection).

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.7. ***Each Licensee shall establish a mechanism for recommending protective actions to the appropriate State and local authorities. These shall include Emergency Action Levels corresponding to projected dose to the population-at-risk, in accordance with Appendix 1 and with the recommendations set forth in Tables 2.1 and 2.2 of the Manual of Protective Actions for Nuclear Incidents (EPA-520/1-75-001).[16] As specified in Appendix 1, prompt notification shall be made directly to the offsite authorities responsible for implementing protective measures within the plume exposure pathway EPZ.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

J.8. ***Each Licensee's plan shall contain time estimates for evacuation within the plume exposure EPZ. These shall be in accordance with Appendix 4.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

[16] This manual has been superseded by *The Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001, May 1992 (which itself is currently being updated).

NUREG CRITERION

J.9. ***Each State and local organization shall establish a capability for implementing protective measures on the basis of Protective Action Guides and other criteria. This shall be consistent with the recommendations of the EPA regarding exposure resulting from passage of radioactive airborne plumes (EPA-520/1-75-001)[17] and with those of U.S. Department of Health, Education and Welfare (Department of Health and Human Services [DHHS])/U.S. Food and Drug Administration (FDA) regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790[18]).***

Explanation

The plans should describe the process and timeframe for making initial PADs on the basis of Licensee notification of plant status and Licensee Protective Action Recommendations (PARs) and for the implementation of these PADs. The plans and procedures also should identify the capability to respond to severe core damage reactor accident.[19] The plan should contain predetermined PADs to protect the public when confronted with a fast-breaking emergency. For fast-breaking accidents, an area(s) should be designated for immediate response on the basis of specified plant conditions prior to a release, or given a release, prior to the availability of information on quantities of radioactive material being released or projected to be released.

For an incident involving actual or significant potential for offsite consequences, immediate evacuation of populations (and/or sheltering if other conditions make evacuation dangerous) in predesignated areas is appropriate without waiting for release rate information or environmental measurements. The decision process should provide for consideration of uncertainty in plant conditions by onsite officials and for uncertainty or unfavorable prognosis of the course of events controlling the incident. After initial PADs have been made and additional information becomes available regarding potential or actual releases, the dose assessment group may provide additional PARs based on dose projections. When field monitoring data become available, they should be used as a basis for making decisions concerning protection of the public in additional locations. In general, protective actions that have been implemented should not be reversed based on revised dose assessments or early field measurements.

The plan and procedures should include the PAGs (these may be expressed as a range as stated in the *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001) and the capability to determine the PAG value that is

[17] Superseded by EPA 400-R-92-001, May 1992.

[18] Superseded by "Guidance on Accidental Radioactive Contamination of Human Food and Animal Feeds, Recommendations for State and Local Agencies, Availability", DHHS, FDA, August 13, 1998 (63 FR 43402).

[19] FEMA and the NRC have issued guidance for protective actions to be taken in response to a severe reactor incident (severe core damage accident). The changes are provided for Licensees, State, Tribal, and local governments in NUREG-0654, Supp.3.

appropriate for the situation. Usually, it is appropriate to evacuate areas where doses are projected to exceed 1 rem TEDE or 5 rem CDE thyroid, the lower end of the PAG range (1-5 rem or 5-25 rem), except for situations that involve a high-risk environment or high-risk groups (e.g., mobility-impaired or infirm). In these cases, the plan should provide for flexibility where doses up to the upper end of the PAG range may be the preferred decision criterion.

The EPA performed risk evaluations during the development of the PAGs so that calculating the risk trade-offs among evacuation, sheltering, and radiation dose should not be required during an emergency response. For areas not being recommended for evacuation, plans should call for instructions for the public to stay indoors and be ready for additional instructions indownwind areas to distances beyond the areas designated for evacuation within the EPZ (NUREG-0654, Supp3). The basis for substituting shelter for evacuation at projected doses up to 5 rem TEDE should be based upon whether the risk of evacuation is significantly higher that normal. Sheltering, rather than evacuation, should be chosen in any situation where sheltering would provide overall greater protection if adequate information is available to make this judgement.

The plan may call for joint decision making with other jurisdictions. In such cases, the plan should describe the procedure to communicate and coordinate with all affected jurisdictions in arriving at mutually acceptable PADs. If joint decision making is not required, the plan should describe the capability to communicate the essential contents of PADs to all affected jurisdictions. The plan should allow for precautionary evacuation of special populations if the State, Tribal, and local jurisdictions choose to do so and should include precautionary or protective actions for schools, hospitals, nursing homes, and other special facilities if the State, local or Tribal decision makers elect this option.

The plan should also provide for a capability to notify school officials of emergency conditions that are expected to or may necessitate protective actions for students. It should identify the criteria that will be used to make the decision to evacuate school children (including day-care centers and private schools) and describe the organization's capability to (1) ascertain which schools are (or potentially will be) affected by a radiological release from a nuclear power plant; (2) establish contact with those schools at the specified ECL, taking into consideration the time required to evacuate, the time needed to gather all necessary resources (e.g., buses, vans, handicapped-equipped vehicles, and a sufficient number of drivers) in a staging area, and the proximity to the nuclear power plant; and (3) recommend specific protective actions to school officials. Protective action decisions for schools may be made by a State or local response official or by school officials, depending on local plans and authorities. The plan should identify how PADs will be made for schools and what criteria will be used.

In addition, the plans and procedures should identify the protective actions and radiation dose or concentration levels that will be used in making decisions about the ingestion exposure pathway. If doses other than those recommended by the FDA

(August 13, 1998) are adopted by State, local or Tribal jurisdiction. The plans must provide an adequate justification for not following the FDA guidance. The use of Derived Intervention Levels (DILs), i.e., measured concentrations of specific radionuclides in foods in lieu of the PAGs, is the approach adopted by the FDA. In order to characterize the extent of the problem, many laboratory analyzes will be required. The plans and procedures should specify the actions that will be taken prior to the determination of the actual levels of contamination in the food produced in the impacted area.

The plan or procedures should include:

1. The organization's procedures for making PADs and implementing protective actions based upon PAGs that are consistent with EPA recommendations; and

2. The process to be followed to ensure coordination of PADs with all appropriate jurisdictions.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10. ***The organization's plans to implement protective measures for the plume exposure pathway shall include the following:***

J.10.a. ***Maps showing evacuation routes, evacuation areas, pre-selected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas (identification of radiological sampling and monitoring points shall include the designator in Table J-1 or an equivalent uniform system described in the plan).***

Explanation

The plans and procedures should contain (possibly in a separate appendix) clear, legible maps and displays showing features or landmarks important to emergency response during the early phase of the emergency. Examples include the plume exposure pathway EPZ and its various sectors and planning areas (may be referred to as Emergency Response Planning Area (ERPA)); roads; streams; towns; evacuation routes; reception and congregate care centers; decontamination facilities; special facilities such as schools, nursing homes, and hospitals; and radiological monitoring points. The plan should designate the frequency for updating maps and should identify the organization(s) responsible for map maintenance. The maps should be updated using the most current and accurate census data.

The plans and procedures should include:

1. Clearly legible maps of all evacuation routes, evacuation areas, pre-selected radiological sampling and monitoring points (including water supplies), reception and congregate care centers in host areas, decontamination facilities, and shelter areas; and

2. Designation of the frequency for updating maps (using the most current and accurate census data) and the organization(s) responsible for map maintenance.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

J.10.b. ***Maps showing population distribution around the nuclear facility, by evacuation areas[20] (Licensees shall also present the information in a sector format).***

Explanation

The plans and/or procedures should include clear, legible maps (possibly in a separate appendix) showing population distribution around the nuclear facility. This distribution should be by planning areas. These maps also should identify directly, or reference where the information may be found, school populations (including day-care centers) and other special populations, including the maximum anticipated population at recreation areas. Note that a day-care center is any facility which provides care for children outside of a school classroom and is located either within or at a facility separate from the provider's permanent residence.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

J.10.c. ***Means for notifying all segments of the transient and resident population.***

Explanation

See Planning Criteria E.5., E.6., and E.7.

[20] The term "evacuation areas" used in this criterion corresponds to the term "planning areas" used throughout this document.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

J.10.d. ***Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement.***

Explanation

The plan should describe the means that will be employed to protect those persons whose mobility may be impaired because of such factors as institutional or other confinement (e.g., school children or persons in nursing homes, hospitals, or prisons). The plan should include or reference a list of all disabled persons in the EPZ and the process for keeping the list up to date. The plan should describe the process for evacuating special populations and for sheltering in place those who cannot be moved. It should describe any special transportation needs for these groups. The transportation resources (including types and quantities of vehicles) that will be used to move them should also be described.

Schools. The plans and procedures should identify schools (public and private, kindergartens, pre-schools, and day-care centers) within the plume exposure EPZ and the persons responsible for planning and implementing protective actions for them. It should stipulate that State or local governments, as appropriate, will take the initiative to identify and contact all public and private school systems within the plume EPZ to assure that school officials have plans in place for protecting the health and safety of their students. Protective action options that are contained in the plans should include provisions for notifying parents and guardians of the status and location of their children during a radiological emergency.

For schools, plans should include:

1. Identification of the organization and officials responsible for both planning and implementing the protective actions.

2. Institution-specific information (e.g., name and location, type of institution and age grouping, total population, means for implementing protective actions, transportation resources, and name and location of relocation center[s]).

3. Time frames for implementing protective actions.

4. Means for alerting and notifying schools, including:

- Identification of the organization responsible for providing emergency information to the schools;

- Methods (e.g., siren and telephone calls) for contacting and providing the emergency information to school officials;

- Method (e.g., tone alert radios and telephone calls) for contacting and activating designated transportation resources (e.g., dispatchers and school bus drivers); and

- Method (e.g., EAS messages) for notifying parents and guardians of the status and location of their children.

Health Care Facilities. The plan should describe the means of evacuating the patient population in hospitals, nursing homes, and other healthcare facilities and the actions required to protect those patients who cannot be relocated out of the hazard area.

Disabled Persons. The plan should provide for a means of protecting all categories of disabled individuals present in the EPZ (For a listing of these categories, see Appendix B, Glossary, in this manual.). Contacts to provide communication and physical assistance should be identified for each disabled individual and agreements made with transportation providers. Agreements should be made with hospitals, mental hospitals, nursing homes, and community mental health centers outside the EPZ to receive the severely mobility-impaired and emotionally disabled.

For disabled persons, the plan and procedures should describe:

1. A list (which may be included by reference) identifying all disabled individuals who need assistance within the EPZ and describing the procedure for keeping the list current.

2. Means that will be used to protect those persons whose mobility may be impaired because of institutional or other confinement (including those who cannot be evacuated and must be sheltered). A means of informing these individuals of planned emergency procedures should be addressed.

3. Transportation resources (types and quantities) to be used to move the mobility impaired.

Prisons. The plan should identify prisons located in the plume EPZ and the persons responsible for planning and implementing protective actions for them. Planned protective actions should be describe.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.e. ***Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution[21].***

Explanation

The plan should describe the jurisdiction's policy on the use of radioprotective drugs, including what groups might be advised to use KI (e.g., emergency workers, institutionalized persons, or the general population within the plume EPZ), how the decision to use KI would be made, and how it would be implemented. This criterion focuses on implementation of KI use, including maintenance of KI supplies, distribution, and record keeping. The next criterion (J.10.f.) focuses on the decision-making processes leading to KI use.

The plan should identify what groups might be instructed or advised to use KI, including emergency workers, particular institutions within the plume EPZ whose populations could not be quickly evacuated, and (if applicable) the general population. In planning for use of KI by institutional populations such as hospital patients, provisions must also be made for use of KI by the institutional staff that will care for them. The plans should address the manor in which individuals in health care institutions will receive approval from their primary physician for the addition of KI to the patients' other medications. Quantities, storage locations, and means of distribution of radioprotective drugs should be described; an adequate supply for each individual should be maintained. For those emergency response organizations that do not routinely distribute KI to emergency workers, but rather distribute KI based on accident and release characteristics, the plans and procedures should clearly identify the method and time required to complete the distribution. The plan should also identify how a recommendation to take the drugs will be communicated to emergency workers and institutionalized persons. It should include the form to be used for documenting ingestion of radioprotective drugs as well as information on emergency workers and others who decline use of KI in advance. Procedures for maintenance of a radioprotective drug supply should be described, including acceptable storage conditions and replacement procedures.

The plan should include the instructions that will be issued with KI. These instructions should indicate that there is a relatively small risk of adverse health effects from taking KI, and that these risks are outweighed by the risk of potential health effects from radiation dose to the thyroid gland in excess of specified doses that are dependent on the age of the individual being exposed. In addition, the instructions should indicate that medical testing for allergies to KI is not necessary, but persons who are known to

[21] The NRC has ruled, "Consideration of Potassium Iodide in Emergency Plans," Final Rule, U.S. Nuclear Regulatory Commission, Federal Register, Volume 66, No. 13, p.5427, January 19, 2001, that the use of KI for the general public be considered during the planning process. This ruling modifies this criterion.

be allergic to iodine should not take KI. Information on correct dosage should be included in the instructions. The correct dosage of KI is dependent on the age of the individual.

Guidelines for use of KI

Age/Risk Group	Radiation Exposure (in Rem)	Recommended KI Dose
Adults over 40	500 or more	130 mg
Adults 18-40	10 or more	130 mg
Pregnant or lactating women	5 or more	130 mg
Adolescents 12-18	5 or more	65 mg
Children 3-12	5 or more	65 mg
Children 1 month to 3 years	5 or more	32 mg
Infants up to 1-month-old	5 or more	16 mg

Source: Food and Drug Administration

The plan should describe:

1. What groups might be advised to take KI;

2. Adequate supply of radioprotective drugs for each individual, including quantities, storage locations, and means of distribution;

3. Adequate maintenance and timely replacement of radioprotective drugs;

4. Means for communicating a recommendation to take radioprotective drugs to the general public if included as an option in the plans and procedures, emergency workers and institutionalized persons; and

5. Instructions to be issued on the correct usage of KI, including allergy considerations and correct dosages.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.f. ***State and local organizations' plans should include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers.***[22]

Explanation

The plan should identify the decision maker(s) by title and describe the decision-making process to be used by the State Health Department or appropriate government agency for recommending administration of radioprotective drugs such as KI during an emergency. The plan should describe the criteria that would be used for determining whether KI should be administered, including criteria for emergency workers, institutionalized persons, and (if applicable) the general population.

Guidance on the criteria for decisions to administer KI varies. EPA 400-R-92-001 recommends a projected dose of 25 rem CDE thyroid as warranting KI for the general public (if administration of KI is included in the plan); and for emergency workers, KI is recommended if atmospheric releases include radioiodine. Guidance issued by the FDA in *Federal Register* 66, December 11, 2001, discusses the administration of KI if the projected dose to the thyroid exceeds 25 rem, without regard to the population group. Both documents leave the decision on conditions that warrant administration of

[22] See "Potassium Iodide as a Thyroid Blocking Agent in a Radiation Emergency," FDA, December 11, 2001 (66 FR 235: 64046).

KI to state medical officials. FDA has issued guidance that modifies the 1982 guidance and uses verying levels of projected doses, depending on age of the receptor, that warrants the use of KI. The plan should:

1. Identify (by title) the person who will make decisions regarding use of KI during an emergency; and

2. Describe the criteria and decision-making process for recommending use of KI.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.g. ***Means of relocation.***[23]

Explanation

The plan should identify how the public within the 10-mile EPZ will be evacuated, if necessary. It should include measures to promote smooth flow of evacuation traffic and provide assistance to persons who have no means of transportation. Such assistance should include (1) transportation resource, (2) the method for determining the number of persons who may need assistance per planning area, and (3) the designated pickup points for individuals without transportation. (This criterion does not include transportation of the mobility-impaired; see Criterion J.10.d. for discussion of transportation of the mobility-impaired.) The plan should provide, in a separate appendix or in appropriate sections, any LOAs that have been established to obtain these resources, as required by Criteria A.3. and C.4.

Measures to promote smooth flow of evacuation traffic should include designation of evacuation routes and establishment of traffic control points along these routes, as necessary. Personnel and equipment for traffic control should be identified. In some cases, a plan may call for converting two-way roads to one-way in order to increase their traffic capability.

The plan and procedures should describe how the public within the plume exposure pathway EPZ will be evacuated, including:

1. Means for controlling traffic to assure a safe and efficient evacuation;

2. Transportation resources, including drivers;

[23] The more exact term is "evacuation." Relocation is a nonurgent action during the post-emergency phase.

3. The method for determining the number of persons who may need assistance per planning area; and

3. Designated pickup points for persons without transportation.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.h. ***Relocation centers in host areas that are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure EPZ (see Criterion J.12.).***

Explanation

The plan should identify relocation centers in host areas. These centers should be located at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure pathway EPZ (15 to 20 miles from commercial nuclear power plants). The plan and procedures should identify the name and specific locations (e.g., address, city) of all centers and their capacities and should include a list of backup centers and those accessible to handicapped persons. The organization managing the center, as well as staffing requirements for the center, should be identified. The plan should also address the LOAs that have been established with all resources and facilities (either in a separate appendix or in appropriate sections, as required by Criteria A.3. and C.4.).

The plan should also identify, if possible, which schools will be directed to which relocation centers and/or host schools. The plan should describe arrangements for the handling of students, including the initial assignment of students to specific areas within the centers, as well as the arrangements for the pickup of students by parents or guardians. The plan should identify any hospitals, correctional facilities, and nursing homes that will receive evacuees. Provisions for the radiological monitoring of evacuees sent to these facilities should be described.

The plan should describe:

1. The identification (e.g., name and physical location) of all relocation centers and host schools for evacuees and students;

2. Organizations responsible for managing the centers, and staffing requirements for each center;

3. Arrangements for handling students at relocation centers and/or host schools;

4. Hospitals, correctional facilities, and nursing homes that will receive evacuees; and

5. Provisions for the radiological monitoring of evacuees.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.i. ***Projected traffic capacities of evacuation routes under emergency conditions.***

Explanation

The plan should reference the Evacuation Time Estimate[24] (ETE) studies and include the results of the ETE, including traffic capacity of the evacuation routes and the potential need to use alternate routes because of traffic impediments, adverse weather conditions, the presence of an airborne radioactive plume, or other factors that might limit the capability to effect a timely, safe evacuation. Maps should be provided as recommended in Criterion J.10.a.

The plan and procedures should contain a reference to the ETE, including the traffic capacity of evacuation routes. They should be reviewed in accordance with State of the Art in Evacuation Time Studies for Nuclear Power Plants (NUREG CR4831, NNL-776, March 1992).

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.j. ***Control of access to evacuated areas and organization responsibilities for such control.***

Explanation

The plan should identify the various transportation modes (e.g., air, rail, water, highway) in the plume EPZ and the means for controlling access to sheltered and/or evacuated areas. The organization responsible for controlling each transport mode should be clearly identified in the plan and procedures. Maps identifying the locations of traffic control points and access control points (TCPs and ACPs) should be included or referenced in the plan. The plan should include contingency measures to be taken if

[24] Review of ETE studies is generally performed separately by transportation experts contracted by the NRC.

it becomes necessary to have additional staff and/or equipment available. It should also contain pertinent information related to the implementation and setup of the TCPs/ACPs, including needed equipment and resources (e.g., cones, barricades). In addition, the plan and procedures should address the means and frequency for keeping the staff at TCPs/ACPs informed as to the status of emergency response activities.

The plan should describe:

1. Procedures for controlling road access to sheltered and/or evacuated areas, including organizations responsible for staffing TCPs/ACPs;

2. Maps identifying TCPs/ACPs (may be incorporated by reference);

3. Equipment and resources needed (e.g., cones, barricades); and

4. Procedures and responsibilities for controlling access via other transportation modes.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.k. ***Identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes and contingency measures.***

Explanation

The plan should identify resources, including manpower and equipment (e.g., tow trucks, snow plows), that may be called on to clear impediments in an emergency. Where outside resources will be used, LOAs (as required by Criteria A.3. and C.4.) should be addressed in a separate appendix or in appropriate sections. All LOAs should be submitted to FEMA for review. The plan should also designate (by title) who will be responsible for directing such resources and for rerouting traffic as necessary.

The plan should describe:

1. Resources available (manpower and equipment) for dealing with impediments to the use of evacuation routes; and

2. Responsibility for direction of resources and rerouting of traffic as required.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.l. ***Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway EPZ (see Appendix 4).***

Explanation

The plans should contain or make reference to a concise summary of evacuation time estimates — for general and special populations under various conditions that is, the time it will take each population to move from the point of notification to the outer boundary of the 10-mile EPZ. (Also see discussion under Criterion J.9.)

The plan and procedures should be reviewed in accordance with NUREG CR4831, NNL-776, March 1992, and should describe or make reference to:

1. Time estimates for evacuation of various sectors or evacuation areas; and

2. The time required for the movement of school children and other special populations.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.10.m. ***The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure, as well as evacuation time estimates.***[25]

Explanation

The plan should include the rationale for the selection of various options within the range of available protective actions. The planned use of precautionary actions (i.e., actions for selected portions of the population prior to the need for protective actions for the general population) should be discussed, and the rationale for the decision to implement such actions should be clearly stated. Initial PADs for the

[25] See *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001, May 1992.

general public should be driven by plant status information; it is not necessary to wait for calculations of projected dose. When plant status information indicates actual or potential severe core damage, the preferred protective action is to evacuate immediately to about 2 miles in all directions from the plant and about 5 miles downwind. Evacuation should be the selected protective action unless environmental conditions or involvement of a high-risk group (e.g., mobility-impaired) make an evacuation unusually hazardous or impossible. Under these conditions, sheltering may be substituted for evacuation. The plan should describe the method used to decide whether evacuation or sheltering will provide overall greater protection.

During the planning process, it is appropriate to review the characteristics of the area and the types of population groups that may affect evacuation. This process should include consideration of protection factors for direct exposure and from inhalation in shelters. Conclusions based on these reviews should be included in the plan. The following considerations are important in the process of deciding between evacuation and sheltering:

- The definition of a GE (the first ECL where protective actions would be required) includes the statement that "Releases can be reasonably expected to exceed the EPA Protective Action Guideline exposure levels offsite for more than the immediate site area" (NUREG-0654, Appendix 1, pages 1-16).

- The May 1992 EPA plume PAGs already discount the reduction in average dose that results from sheltering. Therefore, the projected dose that will be compared to the PAGs should not take into account dose reduction that results from sheltering. Consideration of sheltering effectiveness in reducing dose is appropriate only for evaluating whether sheltering will provide overall greater protection than evacuation.

- The protection factor for wood frame houses is 0.9. Because there are no known plume exposure EPZs devoid of wood frame houses, the dose reduction compared to direct exposure would be only 10% for at least a portion of the shelters.

- Air infiltration into shelters, even if the windows and doors are closed and heating and ventilating systems are shut down, indicates that the effectiveness of the shelter decreases rapidly if the shelter is exposed to the plume for more than two hours. Also, unless there is a mechanism to establish when the plume has left the area so that shelters can be promptly ventilated, much of any dose reduction achieved when the plume has arrived will be lost after the plume has departed.

- There will be significant uncertainty associated with the various parameters needed to make any dose projection: the radionuclide release rate, the radionuclide release duration, the time of the start of any radionuclide release, and meteorological conditions (including wind speed and wind direction).

- In the unlikely event of the worst-case accident, immediate life-threatening doses could occur near the site (NUREG-0654, Section I.D.2, page 12).

Because of the significant uncertainties in the potential source term, the minimal dose reduction available from sheltering, and the possibility of high doses near the site, evacuation usually is the prudent initial protective action based solely on plant status information without recourse to dose projection calculations at the time of the accident.

State and local organizations that elect to follow alternate approaches should include sufficient detail to indicate the rationale for following the alternate approaches.

For subsequent PADs, if source term or environmental data are available, the results of dose projection calculations should be considered in the decision process. The methodology used for such dose projections is covered under Criterion I.10. The plan should include the steps in the decision process leading to the choice of a protective action. It may be helpful, but not required, to include a "decision tree" or graphic illustration of the variables and trade-offs associated with the various options.

Along with any evacuation decision, the plan should provide for the establishment of access control to prevent unnecessary entry to the evacuated areas. (This requirement is covered under Criterion J.10.j.) In addition, if possible, the plan should provide for the use of traffic control to assist with the flow of evacuation traffic.

The plan should describe:

1. The rationale for any pre-planned precautionary actions, including the triggering events that would lead to the decision to implement these actions;

2. The rationale used to make initial PADs; and

3. The rationale used for subsequent PADs, including consideration of various possible options.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

J.11. ***Each State shall specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated foodstuffs. This shall include criteria for deciding whether dairy animals should be put on stored feed. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds,***

water supply intake, and water treatment plants and reservoirs shall be maintained. Provisions for maps showing detailed crop information may be made by including reference to their availability and location and a plan for their use. The maps shall start at the facility and include all of the 50-mile ingestion pathway EPZ. Up-to-date lists of the names and locations of all facilities that regularly process milk products and other large amounts of food or agricultural products originating in the ingestion pathway EPZ, but located elsewhere, shall be maintained.

Explanation

The plan should identify (by title) the person who makes the PADs for the ingestion exposure pathway. The recommendations on accidental radioactive contamination of human food and animal feeds advise that health risk to the public be averted by limiting the radiation dose received as a result of consumption of accidentally contaminated food.[26] This goal will be accomplished by:

- Setting limits, called DILs, on the radionuclide activity concentration permitted in human food. (A DIL corresponds to the concentration in food present throughout the relevant period of time that, in the absence of any intervention, could lead to an individual receiving a radiation dose equal to the PAG.); and

- Taking precautionary or protective actions to reduce the amount of contamination.

Protective actions are steps taken to limit the radiation dose from ingestion by avoiding or reducing the contamination that could occur on the surface of, or be incorporated into, human food and animal feeds. Such actions can be taken prior to and/or after confirmation of contamination. The protective actions for a specific accident are determined by the particulars of the situation and, once initiated, they continue at least until the concentrations are expected to remain below the DILs.

1. ***Protective Actions Prior to Confirmation of Contamination.*** Protective actions that can be taken within the area likely to be affected and prior to confirmation of contamination consist of the following:

    - Simple precautionary actions to avoid or reduce the potential for contamination of food and animal feeds.

    - Temporary embargoes to prevent the introduction into commerce of food that is likely to be contaminated. Care should be taken when determining the area for a temporary embargo prior to the determination of the levels of contamination that is present in the food.

    Protective actions can be taken before the release or arrival of contamination if officials have advance knowledge that radionuclides may accidentally contaminate

[26] For further information, see Accidental Radioactive Contamination of Human Food and Animal Feeds: *Recommendations for State and Local Agencies,* FDA, August 13, 1998.

the environment. Determinations of what protective actions would be taken (and when) may be based on the ECLs, as determined by the Licensee and NRC.

Simple precautionary actions include modest adjustment of normal operations prior to arrival of contamination. These will not guarantee that contamination in food will be below the DILs, but the severity of the problem should be significantly reduced. Typical precautionary actions include covering exposed products, moving animals to shelter, corralling livestock, and providing protected feed and water.

If the predictions of the magnitude of future offsite contamination are persuasive, precautionary actions that could be taken and completed before an SAE or GE sould be considered.

A temporary embargo on food and agricultural products (including animal feeds) prevents the consumption of food that is likely to be contaminated. Distribution and use of possibly contaminated food and animal feeds is halted until protective actions are instituted. Temporary embargoes are applied when the concentrations are not yet known. Because there is potential for a negative economic impact on the community, justification for this action must be significant. The embargo should remain in effect at least until results are obtained. A temporary embargo should be issued only upon declaration of a GE and if predictions of the extent and magnitude of the offsite contamination are persuasive. The geographical area affected by the embargo would depend on the accident sequence, and the meteorological conditions.

2. ***Determination of Contamination in Food.*** The plan and procedures should identify how the levels of contamination in food will be determined. This should include sampling and analysis capability.

3. ***Protective Actions for Foods Confirmed to be Contaminated.*** Protective actions that should be implemented when the contamination in food equals or exceeds the DILs consist of the following:

   - Temporary embargoes to prevent the contaminated food from being introduced into commerce; and

   - Normal food production and processing actions that reduce the amount of contamination in or on food to below the DILs.

   - Condemn foodstuff.

   A temporary embargo to prevent the introduction of food from a contaminated area into commerce should be considered when the amount of contamination equals or exceeds the DILs or when the presence of contamination is confirmed, but the concentrations are not yet known. The temporary embargo would continue until measurements confirm that concentrations are below the DILs.

4. ***Protective Actions for Animal Feeds Confirmed to be Contaminated.*** Protective actions to reduce the impact of contamination in or on animal feeds, including pasture and water, should be taken on a case-by-case basis. Protective actions that could be taken when animal feeds are contaminated include the substitution of uncontaminated water for contaminated water and the removal of lactating dairy animals and meat animals from contaminated feeds and pasture and substitution of uncontaminated feed.

   The plan should specify, by title and organization, the individual or individuals who are authorized to make decisions regarding any of the protective actions outlined above. Note that the putting dairy animals on stored feed and protected water does not imply that the structure should be closed to outside air, as is the case when discussing sheltering for the general population. If a suitable structure is not available, provision of stored feed and the provision of protected (uncontaminated) water is adequate.

   The plan should describe the rationale for the selection of areas where samples should be collected. The plan should also describe resources for the collection of food and agricultural product samples in the areas of concern, including a provision for use of chain-of-custody documentation. It should provide information about the laboratory's capability to analyze the various samples, and should list DILs (i.e., concentration levels of various radionuclides in various foods that would be equivalent to the PAGs, which are expressed in rem). The sampling protocols and laboratory analysis methods specified should be capable of determining concentrations at levels at least as low as the DILs.

   Maps should be maintained and available for recording a variety of data. The plan should make provisions for recording field survey readings and projected ingestion doses on appropriate maps. Also, the plan should make provisions for recording land use information, such as the location of agribusiness activities (e.g., dairies, food processing plants, surface water supplies and water supply intakes, and other permanent activities). Processing plants that are located *outside* the EPZ but receive potentially contaminated products from *inside* the EPZ should also be identified, as well as processing plants located *within* the EPZ that receive products from *outside* of the EPZ. The plan should provide a means for access to information regarding the location of various crops. This information will change frequently, and the plan should specify where up-to-date information is available and how it can be obtained, rather than attempt to include such information. The plan should include provisions for obtaining information (i.e., county or local agriculture extension offices) on the status of harvesting operations within the areas of concern (i.e., which crops are being harvested or are near harvesting).
   After decisions on protective actions have been made, the plan should include specific steps necessary to implement such decisions. The plan should identify the organization that has the authority to prohibit the sale or movement of food or agricultural products. It should describe the process that must be followed to prevent the sale or movement of products of concern.

The plan and procedures should describe:

1. The title and organization of the individual who has the authority to make decisions in the ingestion pathway planning zone.

2. The protective actions planned and the rationale for the selection of actions. (Also see Criteria J.9. and J.10.m.)

3. The methodology to be used to designate the areas of concern where monitoring and sampling are to be implemented.

4. The methodology for the collection of agricultural samples, including identification of field team members, provision of necessary supplies, and names and addresses of contact points for obtaining permission to collect samples.

5. Description of analytical laboratory capability to analyze various samples and of the procedure for reporting analytical results to the appropriate organization.

6. The location of and the means of obtaining up-to-date information on the location of permanent agribusiness facilities within the EPZ. This database should include facilities such as dairies, food processing plants, surface water supplies, water intakes, and other permanent facilities. Facilities outside the EPZ that could receive potentially contaminated products from within the EPZ and names and telephone numbers for points of contact should also be included in the database.

7. The location of and the means of obtaining up-to-date information on land use (i.e., which crops are being grown in which areas). This database should include information on the status of harvesting.

8. The DILs that would warrant implementation of protective actions. The rationale and assumptions used to develop the DILs should be included.

9. The availability of suitable maps for recording various data.

10. The means by which the agribusiness person will be notified of a protective action that would affect his/her ability to sell or move food or products produced.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

NUREG CRITERION

J.12. ***Each organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available should be capable of monitoring within about a 12-hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.***

Explanation

1. ***Monitoring.*** The plan should provide for adequate resources, including trained personnel, equipment, and detailed procedures, for the radiological monitoring of a minimum of 20% of the total EPZ population in a 12-hour period at host areas such as reception (relocation) centers.[27]

   "Total EPZ population" (as used here) includes residents, commuters, anticipated transient populations that may occur seasonally, and special facility populations such as nursing home residents and school children. Requirements for radiological monitoring personnel and equipment can be estimated on the basis of the number of persons to be monitored. Based on the latest FEMA guidance, the use of unmodified CDV-7000 instruments is not an efficient method for meeting the initial monitoring requirements. For hand-held equipment, the number of monitoring kits needed is one-half the number of monitors needed (since the equipment can be used for both shifts). The plan should indicate the type of monitoring equipment that will be used.

   If portal monitors are used, the plan should indicate the type of monitor, monitoring capacity (in persons per hour), and number of personnel required to operate the monitor. Sufficient equipment and staffing should be provided within 12 hours to monitor the required number of persons. (For additional information on monitoring instruments, see Criterion H.10.)

   The plan should indicate the trigger or action level (as displayed by the instrument) for requiring decontamination. For trigger/action levels for portal monitors, refer to the *Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response*, (FEMA, March 1995). The action level should be reported in units appropriate for the type of instrument used for monitoring.

   The plan should also indicate how monitoring data will be documented. A list or other record should be made of all persons monitored and should state whether contamination was detected. A form is typically used for recording monitoring results and should be included in the plan.

   The agency or organization responsible for handling contaminated waste (e.g., contaminated clothing, personal articles) at reception centers should be indicated, as well as the location where the wastes will initially be stored and how the storage areas will be marked and secured. It should also discuss procedures and

[27] The 20% figure does not include remonitoring of persons who have been decontaminated.

facilities for handling of evacuees' contaminated possessions, including storage, security, and owner identification.

2. ***Decontamination.*** While not specifically discussed in NUREG-0654, good health physics and ALARA principals require that the plan should provide for decontamination of individuals found to be contaminated during the monitoring process. Decontamination capabilities available at a reception (relocation) center should include at least sinks and showers with soap and water and changes of clothing for contaminated individuals. Localized contamination (hands or face) can be removed by washing in a sink; contamination in other areas may require a shower. Individuals who cannot be decontaminated with simple soap and water washing should be referred to the care of qualified medical or health physics personnel for further evaluation and/or decontamination measures.

   The decontamination of equipment and vehicles may include (1) use of vacuum cleaners with high-efficiency particulate air (HEPA) filters; (2) use of soap and water with rubbing along contaminated areas; (3) use of high-pressure water and soap solutions applied copiously to affected areas; and (4) use of organic solvents for greasy or waxed surfaces on objects.

   The plan should provide for re-monitoring of individuals, vehicles, and equipment after decontamination (same-sex monitors should be available for this remonitoring). The number of decontamination attempts to be made before the individual is sent to a medical facility should be stated, as well as which medical facilities will receive individuals with fixed contamination. Procedures for addressing equipment and vehicles that cannot be decontaminated should also be described.

3. ***Contamination Control.*** The plan and procedures should describe contamination control methods (e.g., floor coverings, personal protective equipment worn by workers for each facility). The physical layout of the monitoring and decontamination center should be shown in diagrams, including the flow of individuals and vehicles through the facility(ies). The flow should ensure that individuals and vehicles that have been monitored and found to be uncontaminated are kept separate from contaminated and unmonitored individuals and vehicles. Individuals and vehicles found to be contaminated should be kept separate from uncontaminated and unmonitored ones. Individuals exiting the monitoring area should be provided with documentation that they have been monitored and found free of contamination below the trigger level. Such documentation will be a condition for entering registration and congregate care areas.

4. ***Registration.*** The plans and procedures should identify the means that would be used for registration of evacuees at reception (relocation) centers. Forms or electronic means (e.g., audio, or audio/video) may be used. Registration must be conducted after monitoring and decontamination. American Red Cross (ARC) personnel usually assist in this process, and their registration forms may be used. If ARC forms are not used, the forms should include name, address, social security number, family members, and

time of arrival at the facility. Plans should describe the types of data to be collected and the method (e.g., form or ticket provided to evacuee) of verifying that they have been monitored and found to be uncontaminated.

The plan or procedures should describe:

1. Radiological monitoring of evacuees (including transients), personnel and equipment capable of monitoring 20% of the EPZ population assigned to each facility within about a 12-hour period;

2. Decontamination procedures, including the action levels that trigger decontamination activities and referral for medical attention;

3. Contamination control measures, such as floor coverings and personal protective equipment;

4. The physical layout of the facility, with diagrams that show the flow and layout of operations, including a description of the means for separating contaminated, uncontaminated, and unscreened individuals and vehicles; and

5. Description of the process for registration of evacuees at reception (relocation) centers in host areas, including documentation of monitoring for referral to congregate care facilities.

Plan(s) That Should Include This Information

Licensee ___ State X Local X

11. Planning Standard K – Radiological Exposure Control

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 PAGs.

NUREG CRITERION

K.1. ***Each Licensee shall establish onsite exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides (EPA 520/1-75/001[28]) for:***

a. removal of injured persons;

b. undertaking corrective actions;

c. performing assessment actions;

d. providing first aid;

e. performing personnel decontamination;

f. providing ambulance service; and

g. providing medical treatment services.

Plan(s) That Should Include This Information

Licensee X State __ Local __

[28] Superseded by EPA 400-R-92-001, May 1992.

NUREG CRITERION

K.2. ***Each Licensee shall provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR §20 limits. Procedures shall be worked out in advance for permitting onsite volunteers to receive radiation exposures in the course of carrying out lifesaving and other emergency activities. These procedures shall include expeditious decision making and a reasonable consideration of relative risks.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

K.3.a. ***Each organization shall make provision for 24-hour per day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers. Each organization shall make provisions for distribution of dosimeters, both self-reading[29] and permanent record devices.***

Explanation

The plan should include a description of the provisions made for 24-hour capability to determine radiation doses and access to and distribution of personal monitoring equipment, (i.e., dosimetry) to any worker who may be potentially exposed to ionizing radiation as a result of an accident. To understand the criterion fully, it is necessary to define what the guidance means by *emergency personnel* (including volunteers) and *dosimeters*. These are defined as follows:

1. ***Emergency Personnel.*** These personnel, also referred to as *emergency workers*, are individuals within the plume EPZ who have an essential mission to protect the health and safety of the public during the emergency phase of an accident. The plan may designate services for which those providing the service will be classified as emergency workers. *Volunteers* with emergency duties are also considered emergency workers. Individuals who may be required to incur radiation exposure under emergency conditions include (but are not necessarily limited to) the following: field monitoring team personnel; transportation services (evacuation vehicle drivers); law enforcement, fire fighting, and rescue personnel, including ambulance crews; personnel carrying out backup route alerting procedures; traffic control personnel; some personnel at institutional, health service, or industrial facilities; and some essential services or utility personnel (e.g., electric, gas, water, water treatment, telephone). These

[29] "Self-reading dosimeters" are now referred to as "direct-reading dosimeters (DRDs)."

personnel are considered emergency workers when their services are required to protect the health and safety of the general public and valuable property during the emergency phase of an accident. In addition to the emergency workers described above, other individuals who have emergency assignments outside the plume EPZ could come into contact with radioactive materials as a result of the accident. All emergency workers outside the 10-mile EPZ are required to have dosimetry. A permanent record dosimter (TLD, etc.) is required for each emergency worker. The use of direct-reading dosimeter (DRD's) by these workers is encourraged, but not required.

2. ***Dosimeters.*** Dosimeters are instruments that measure external exposure to gamma radiation. They do *not* measure internal committed dose from inhaled or ingested materials. Dosimeters are available in two basic types: "permanent" or "non-direct-reading" and "direct-reading."

   A *permanent* or *non-DRD* (a TLD or film badge[30]) should be provided to each emergency worker. The dosimeter will provide an accurate record of the gamma exposure received by the emergency worker over the duration of the incident, as well as being a backup device for the DRD(s).

   In addition to the permanent record device, the plan should describe the capability to provide DRDs to emergency workers who will be working within the EPZ. There are two major types of DRDs acceptable for use in emergency response. The most common is an ion chamber electroscope. The other type is an electronic dosimeter with an LED display and an alarm circuit. Either type allows the emergency worker access to information concerning gamma exposure incurred since the device was last zeroed. (Note: all electronic dosimeters are subject to some degree of radio frequency [RF] interference. The amount of RF interference depends on the amount of shielding in the dosimeter design and the frequency range. The electronic dosimeters used in emergency response plans should be tested with any hand-held radios or cellular telephones that may be used by the emergency responders to determine whether the electronic dosimeters will be affected by RF interference.)

   The issuance of EPA 400-R-92-001 changed the method used to calculate dose to both the emergency worker and the general public. Currently, the dose that is compared to emergency worker dose limits or early-phase PAGs is the sum of the external dose from gamma radiation and the CEDE from internal exposure caused by inhalation of radioactive material.

[30] The TLD or film badge should be read by a processor accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) or other accreditation program in accordance with American National Standards Institute, Standard N13.11-1983, *Personal Dosimetry Performance Criteria for Testing*. NVLAP accreditation should be for the specific type of dosimetry in use and should be for the type of radiation(s) for which the individual wearing the dosimeter is monitored.

Dosimeters measure external exposure to gamma radiation, but not the dose from airborne radioactive material that is inhaled and that may contribute a major portion of the TEDE. Dose from uptake of radioiodines is mitigated by the administration of KI. Dose from inhalation of particulate materials could be controlled by the use of properly fitted respirators; however, respirators are generally not practical for radiological emergency response, and DRDs are commonly used (along with appropriate adjustment factors to account for the inhalation portion of the dose) to estimate the TEDE during the emergency phase. Assessment of the actual TEDE received by individual emergency workers is conducted after the emergency is over.

Any discussion of a recommended system or a minimum acceptable system must be coupled with the methodology adopted by the State for the conversion of Roentgens of exposure (as measured by the DRDs) to dose (rem) in terms of TEDE. While the Federal recommendation is to use a factor of 5 for this conversion, States can be more conservative than the Federal guidance. The basic approach is that the plan must provide the emergency worker with the ability to determine his/her dose. As stated previously, there are several dose limits for emergency workers; the lowest is 5 rem. The minimum acceptable DRD provided must be capable of reading this dose when the State-selected factor is applied. For example, if the State accepts the 5 factor, the minimum acceptable DRD must be capable of reading 1 R. If the State adopts administrative dose limits or turn-back values that are more restrictive than the EPA emergency worker dose limits, the DRD must still be able to be read when the selected factor is applied.

For the same reason, it is difficult to specify the recommended system; however, using two DRDs, one a low range and one a high range, is better than using a single DRD. The use of the high-range DRD is appropriate because of the potential of doses greater than 25 rem for life-saving missions and missions conducted to protect large populations. These missions should be assigned only to those emergency workers who volunteer to receive doses in excess of 25 rem TEDE. Real life-saving missions are likely to arise without warning. The time necessary to issue additional dosimetry will probably not be available, so the high-range DRD is included in a recommended system.

For those individuals with assignments outside the plume EPZ who might come into contact with radioactive materials as a result of the accident, the State should determine the appropriate dosimetry. Because there is little chance for inhalation exposures by these individuals, the use of a factor to convert R as read by the DRDs to rem TEDE is probably not required. The issuance of a non-DRD and an area DRD for these workers is satisfactory.

3. ***Dose Control and Limits.*** The plan should address the dose limits for emergency workers, as provided in the EPA 400-R-92-001 document: a 5-rem limit for all activities, 10 rem for activities conducted to protect valuable

property where a lower dose is not practicable, 25 rem for life-saving activities or protection of large populations where a lower dose is not practicable, and greater than 25 rem for life-saving activities or protection of large populations where only emergency workers who volunteer for higher doses are allowed and only if they have been made fully aware of the risks involved. Also, the plan should explain that the dose limits for emergency workers apply only during the period of the emergency, and that the emergency ends when (1) the release has ended and the plume has dispersed, (2) valuable property has been protected, and (3) the public is protected by either evacuation or relocation in accordance with applicable PAGs. Doses incurred by emergency workers after these three conditions are met should be controlled in accordance with dose limits for occupational exposure, as identified in the State radiation control program's regulatory requirements or 10 CFR § 20, whichever is the most restrictive.

The following three options for dose control are considered acceptable for implementing the EPA dose limits for emergency workers. Other options may be approved.

- *Option 1.* Until evacuation of the general public is complete, the monitoring and control of emergency worker doses is based only on the gamma radiation exposure as measured by a DRD without regard to additional dose that may be received from inhalation. Emergency workers entering the plume after evacuation of the general public are assigned a predetermined administrative dose limit, stated in terms of external radiation dose only, that is lower than the maximum TEDE dose recommended by the EPA for the class of emergency response activity to be performed. The TEDE calculation for emergency workers who have taken KI should not include the contribution from thyroid dose due to the inhalation of radioiodine, as that contribution will be minimal if KI is administered prior to exposure. The lower administrative dose limit may account for (1) the radiation dose already received by workers, and (2) the calculated ratio of external dose to the TEDE. This calculated ratio should be based upon dose projections using utility-provided source terms or measurements of the radionuclide mix in the plume.

- *Option 2.* An administrative limit on the dose to emergency workers entering the plume is determined in advance and documented in emergency plans and procedures. The administrative limit should be stated in terms of the external dose measured by a DRD. To account for the inhalation dose, which cannot be measured prior to or during a mission, the administrative limit should be set lower than the limit for each class of activity recommended by the EPA. By selecting an appropriate value for the administrative limit on measured external dose and restricting workers to that limit, there can be reasonable assurance that after including the dose from inhalation, the TEDE to a worker will likely not exceed the applicable limit. The TEDE calculation for emergency workers who have taken KI should not include the contribution from thyroid dose due to the inhalation of radioiodine, because that contribution will be minimal if KI is administered prior to exposure. It can be shown that for the less severe, but

more probable, reactor accident sequences, the TEDE to emergency workers who have taken KI would not likely exceed five times their measured external dose as shown on DRDs. Therefore, if the external dose measured by a DRD is limited to 1/5 of the applicable limit, the TEDE would not likely exceed the limit. For example, if the external dose measured by a DRD is limited to 5 R, the TEDE would not likely exceed 25 rem.

- *Option 3.* Administrative dose limits for emergency workers are not predetermined but are calculated for the specific accident anticipated or in progress. The limits should be based on dose calculations similar to those used to determine the need for public protective actions. The limits, stated in terms of external dose measured by a DRD, would be set low enough to keep the TEDE to emergency workers below the maximum dose recommended for the various classes of activity.

  The TEDE calculation for emergency workers who have taken KI should not include the contribution from thyroid dose due to the inhalation of radioiodine, because that contribution will be minimal if KI is administered prior to exposure. The dose limits could remain the same throughout a given emergency, or they could be revised periodically on the basis of knowledge of the radionuclide constituents of the plume.

Each of the above options is considered acceptable. Option 2 appears to offer the best balance of simplicity and flexibility while protecting emergency worker safety.

4. ***Record Keeping.*** Both the non-DRDs and DRDs require a record listing the person to whom each dosimeter was assigned. Emergency workers should keep the assigned non-DRDs throughout the emergency phase, unless their lead organization requests earlier return to verify anomalous readings on a DRD or the radiological officer reissues all non-DRDs. The DRD may be assigned to another emergency worker provided it has been re-zeroed and the initial reading recorded for the other individual (along with its serial number or other means of identification). A specific contact, time, and location for the return of all dosimeters should be identified to emergency workers.

5. ***Quantities.*** The plan must indicate the quantities of dosimetry available. There should be enough DRDs for every emergency worker and enough non-DRDs for both emergency workers and other workers supporting the emergency response who may be exposed to radiation.

6. ***Distribution.*** The plan must describe the procedures for distributing dosimetry to all emergency workers and to those members of the public needing (and permitted) access to the restricted area. If "group dosimetry" is to be used, the procedures and a description of where the dosimetry is stored should be described in the plan. If dosimetry is stored in a different location than where it will be distributed, the plan should indicate how it will be transported to the

distribution location. The plan should address how possible shortages during an emergency will be overcome. Group dosimetry should only be used when emergency workers are in close proximity to each other in low-exposure areas (e.g., reception centers, hospital emergency rooms, EOCs).

Retrospective determinations of TEDE for emergency workers should be made following radiological emergencies at commercial nuclear power plants, primarily to address the liability concerns of employers of the workers (rather than the health and safety concerns of the workers) during these emergencies. Permanent record dosimeters could provide the external dose component, and records on the time history of exposure should be kept. While retrospective determinations should be made, it is not necessary for State and local governments to undertake such analyses; they may rely upon utilities and Federal agencies to make these determinations. Therefore, FEMA will not evaluate the issue of retrospective determinations of TEDE for emergency workers in State and local government radiological emergency plans or exercises. However, the plan should indicate the arrangements for calculating retrospective determinations of TEDE.

The plan or procedures should describe:

1. Procedures (or options) to be used for exposure control (including exposure from inhalation);

2. Dose limits for emergency workers;

3. The types and quantities of dosimeters and dosimeter chargers available per location and the number of persons (emergency workers) needing dosimetry devices;

4. The processor for the permanent record dosimeters and procedures for requiring early reading of permanent record dosimeters;

5. Specific dosimetry instructions, including when, where, and to whom individuals should return their dosimetry devices;

6. Dosimetry storage locations; and

7. The procedures for distribution of dosimetry to (1) all emergency workers, and (2) those members of the public needing (and permitted) access to the restricted area.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

K.3.b. ***Each organization shall ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records for emergency workers involved in any nuclear accident.***

Explanation

The plan should state that DRDs should be "read" at regular intervals to determine whether emergency workers have been exposed to radiation. All emergency workers should read their dosimeters and record any exposure indicated. Each reading should be noted on a record card or form that was provided with the dosimeters, even if no exposure occurred. When some specific exposure has occurred, the radiological health officer or other appropriate supervisor needs to be informed, particularly if the dose limits for the mission have been reached or exceeded. The details of these procedures may vary from one State and/or site to another. However, the plans and procedures for a State should be consistent from location to location (and site to site) within that State. It also is important that each plan has prescribed intervals for reading and recording exposure to radiation. The plan should specify the procedures for recharging of low-range DRDs if recharging is necessary to support the reporting of any administrative limits placed on dose. The plan should describe how emergency workers will be informed of the requirement to read, record, and report dosimeter values.

The plan should indicate:

1. The procedure for obtaining dose information from emergency workers;

2. The time frame for reading dosimeters (e.g., every 15 or 30 minutes);

3. The method for recording doses (e.g., the form to be used); and

4. If administrative limits have been reached (or exceeded), procedures should require appropriate reporting (refer to administrative requirements, Criterion K.4.).

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

K.4. ***Each State and local organization shall establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public PAGs (i.e., EPA PAGs for emergency workers and lifesaving activities[31]).***

Explanation

During response to a radiological emergency, emergency workers may be at risk of incurring radiation exposure beyond the EPA General Public PAG. To protect the health and safety of emergency workers, State and local plans should ensure that such excess exposures are undertaken only as authorized by the plan and controlled by supervisory personnel.

As noted in Criterion K.3.a., the EPA has promulgated guidance on emergency worker exposure control in terms of TEDE, which includes the deep-dose equivalent from external gamma radiation and the CEDE from exposure to internal organs caused by inhalation of airborne radioactive materials during an emergency. All applicable limits should be included in the plan (e.g., administrative, turn-back, general emergency assignments, protecting valuable property, life-saving or protecting large populations, protecting pregnant women and unborn children). The dose limit is 5 rem TEDE, unless circumstances warrant a higher limit. If 5 rem TEDE is not a practical limit, a limit up to 10 rem TEDE may be selected for protection of valuable property, and up to 25 rem TEDE for life-saving activities or protection of large population groups. The plan should address the assignment of these limits for emergency work. Doses higher than 25 rem TEDE may be voluntarily accepted by emergency workers who are fully aware of the health risks involved, including the numerical estimates of dose at which acute effects of radiation may be incurred and the numerical estimates of the risk of delayed effects from radiation dose. The *Dose Limits for Emergency Workers* table found in EPA document 400-R-92-001 should be present in the plan or appropriately referenced. The plan should also reference or include the procedures that will be used for authorizing individuals to volunteer for doses higher than the dose limits stated in the plan for assignment of emergency work. This section should include procedures and the source of information for briefing volunteers on the radiation risks involved. Guidance is provided in EPA 400-R-92-001. In addition, the plan should clearly state that the dose to emergency workers should be treated as a once-in-a-lifetime exposure, and should not be added to occupational radiation exposure accumulated under nonemergency conditions. For individuals who volunteer to receive doses in excess of the limits stated in plan, the plan should also include a description of the full reporting and decision chain process from the emergency worker through the final authorizing person back to the emergency worker.

The organization should indicate methods to assure adequate protection of minors and the unborn during emergencies. Therefore, pregnant women or individuals under the

[31] *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001, May 1992.

age of 18 should not perform emergency services in an area where the radiation exposure is expected. As in the case of normal occupational exposure, doses received under emergency conditions should be minimized to the extent practicable (e.g., use of KI, where appropriate; limiting the time spent on work performance in radiation areas; and the rotation of available emergency workers).

The plan should specify:

1. The dose limits (TEDE) for the mission (accounting for dose from inhalation);

2. Actions to be taken when exposure limits have been reached;

3. Any special conditions requiring additional limitations (e.g., pregnant workers);

4. The procedure for authorization to exceed pre-authorized exposure limits and the management of workers' exposure above the limits;

5. The point of contact if the allowable upper limit is reached for authorization to remain in the hazardous area and receive additional exposure, (e.g., for special, lifesaving missions);

6. Information on risk and threshold doses for health effects to be provided to emergency workers volunteering for higher dose exposure; and

7. Other "administrative limits" should be identified.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

K.5.a. ***Each organization, as appropriate, shall specify action levels for determining the need for decontamination.***

Explanation

Because emergency workers may be working in areas where they (and their equipment and vehicles) may become contaminated with radioactive materials, the plan should describe the capability to activate and operate a facility for the monitoring and decontamination of emergency workers and equipment, including their vehicles. The plan should describe the facilities for monitoring and decontamination, including methods, supplies, and equipment for minimizing contamination while performing monitoring and decontamination procedures (e.g., protective coverings, instructional

signs), and trained staff that will be available to perform monitoring and decontamination.

Monitoring procedures should be described, including the process for checking the instrument(s) for proper operation. For a probe-type instrument, this procedure includes checking the batteries and measuring radiation from an accompanying radioactive check-source. For a portal monitor, the procedure involves turning the instrument on, checking for power indication, operating and observing any check circuits, and counting the check source according to procedures for source location and counting time. Portal monitors should be capable of meeting the Portal Monitor Standard set forth in the *Contamination Monitoring Standard for a Portal Monitor Used for Radiological Emergency Response* (FEMA, March 1995).

The plan should also describe the procedures for monitoring people using either portal monitors or portable instruments. Portable survey instruments should have earphones or speakers and a covered detector/probe (e.g., covered with thin plastic such as Saran Wrap™ or other similar plastic wrap that is thin, transparent, fits tightly, and can be easily replaced if it becomes contaminated). Experiments show that one or two layers of plastic wrap will not significantly shield the beta radiation from the detector. If the detector (probe) is not covered, extra detectors should be available to replace those that become contaminated.

For portable instruments, the beta shield on the detector must remain open and facing the contaminated surface and should be moved over the entire body of individuals at a close distance from the surface and at a relatively slow speed. These factors vary, depending on the type of instrument and detector used and should be clearly described in the appropriate procedures.

Portal monitors are used for monitoring individuals who are standing inside or passing through the monitoring framework for a specified period of time while the instrument integrates the amount of radiation received. The duration of the integration is dependent on the type of portal monitor, the background radiation in the area, and the minimum detection level setting. Monitoring instruments are used to provide reasonable assurance that the risk of skin cancer and other significant radiation effects to the skin of individuals exposed to radioactive contamination does not exceed the guidelines for risk of health effects established by the EPA. The plan should indicate that the portal monitors will meet the requirements contained in the FEMA guidance document *Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response*.

Procedures for monitoring equipment and vehicles should be included in the plan. The procedures described here are to be used for emergency workers; there is a possibility that their equipment and vehicles will be contaminated. It generally is not necessary to monitor the entire surface of the vehicles. At minimum, areas such as the front bumper, radiator grill, wheel wells, and door handles should be monitored. If elevated readings are observed in the hood area, it is possible that the air cleaner is contaminated. The air

cleaner is within the engine compartment and sometimes not easily accessible. The plan should provide for trigger levels for such situations. Interior surfaces, including the driver's seat, steering wheel, and gas and brake pedals should be monitored. The passenger side floor and seat should be monitored, if persons who rode in the vehicle were found to be contaminated, or if otherwise deemed appropriate. Any area where emergency equipment was placed, such as a trunk or deck area, and all equipment taken into the plume EPZ (including paper forms and other spare supplies) should be monitored.

Organizations should include in their plans the "decision criterion" that indicates a need to decontaminate emergency workers and their equipment, including their vehicles. The instruments ordinarily used for determining contamination levels are count rate meters employing G-M detectors. Therefore, the decision criterion is usually given in counts per minute (cpm). The action level, sometimes referred to as a "trigger level,"[32] should be defined in the plan, although it may change depending on the detection instrument used.

The plan should describe:

1. Facilities for monitoring (and decontamination) of emergency workers and equipment, including vehicles, along with operating and implementing procedures;

2. The location of the monitoring (and decontamination) facilities (preferably outside the plume EPZ);

3. Procedures for controlling the spread of contamination at the emergency worker monitoring facilities;

4. The radioactive contamination level that will trigger decontamination of emergency workers, their equipment, and vehicles (expressed in cpm);

5. The survey instruments (i.e., specific equipment and sensitivity) expected to be used to monitor emergency workers, their equipment, and vehicles; and

6. Procedures for monitoring of individuals and equipment.

Plan(s) That Should Include This Information

Licensee X State X Local X

[32] "Trigger level" is a designated value whereby an individual is directed to perform a specific action. This term is used in plans synonymously with the terms "action level," or "decision criteria."

NUREG CRITERION

K.5.b. ***Each organization, as appropriate, shall establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.***

Explanation

Facilities for the decontamination of emergency workers may be located separately from decontamination facilities for the general public, or they may be collocated. The plan should include information on the following issues.

1. ***Facility Locations.*** The location of emergency worker decontamination facilities should be indicated; these facilities should be located outside the plume EPZ if possible. Facilities should consist of a structure containing the necessary equipment and supplies (including separate showers for men and women), and an open area for monitoring and decontamination of vehicles and equipment with sufficient parking space to separate contaminated and clean vehicles. The address and physical layout (diagrams showing the flow of individuals and vehicles through the facility[ies]) should be shown. Provisions for storage of contaminated clothing and other personal items should be described, including (1) procedures that will be implemented to avoid raising the background gamma exposure rate significantly in the monitoring area, (2) the location where the wastes will initially be stored, and (3) how the storage areas will be marked and secured.

2. ***Procedures for Recording Contamination.*** Procedures for recording contamination and exposure of emergency workers should be described, as well as procedures for isolating contaminated vehicles and equipment, if necessary. The plan also should describe the person (by title) who is responsible for and the means for disposal and/or storage of contaminated wastes (both initial and intermediate storage) and the security measures that will be used to protect the waste from being mishandled.

3. ***Decontamination.*** The plan should describe decontamination procedures for individuals (emergency workers), equipment, and vehicles. Generally decontamination supplies available at the emergency worker decontamination center should include, at a minimum, showers with soap and water, wash cloths, towels, and changes of clothing.

   Decontamination of equipment and vehicles may include measures such as (1) vacuum cleaners (those with high-efficiency particulate air [HEPA] filters are preferred); (2) use of soap and water with rubbing applied along areas that are contaminated; (3) use of high-pressure water and soap solutions applied copiously to affected areas; and (4) use of organic solvents for greasy or waxed surfaces on objects.

The plan should provide for re-monitoring of individuals, vehicles, and equipment after decontamination. The plans should specify the number of decontamination attempts to be made before the individual is sent to a medical facility for more intensive decontamination, as well as which medical facilities will receive individuals who are still contaminated. Procedures for dealing with equipment and vehicles that cannot be decontaminated also should be described.

The plan should provide for collection, handling, storage, and disposal of contaminated wastes, and discussions of waste handling procedures should address all types of anticipated contaminated wastes, including clothing, equipment, decontamination supplies, wash water, etc.

4. ***Contamination Control.*** The plan should describe contamination control procedures (e.g., floor coverings, personal protective equipment worn by workers) for each facility, including the means for separating individuals that have not been screened or have been determined to be noncontaminated from those that are considered to be contaminated.

The plan or procedures should address:

1. Supplies and equipment for decontamination;

2. Procedures for decontaminating people, equipment, and vehicles;

3. Procedures for re-monitoring people, equipment, and vehicles and recording the results;

4. The criteria for sending individuals with fixed contamination for medical attention;

5. Procedures for controlling the spread of contamination;

6. The number of people trained and available to perform decontamination in the event of an emergency; and

7. Procedures for contaminated waste collection, handling, storage, and disposal.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

K.6. ***Each Licensee shall provide onsite contamination control measures including,***

a. area access control;

b. drinking water and food supplies; and

c. criteria for permitting return of areas and items to normal use, see Draft ANSI 13.12.[33]

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

K.7. ***Each Licensee shall provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

[33] Draft ANSI 13.12 has been superseded by (1) *The Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,* USEPA, EPA 400-R-92-001, May 1992 (currently under revision) and (2) *Guidance on Accidental Radioactive Contamination of Human Food and Animal Feeds: Recommendations for State and Local Agencies,* FDA, August 3, 1998 (63 FR 43402) according to the Addenda to NUREG-0654/FEMA-REP-1, Rev.1.

12. Planning Standard L – Medical and Public Health Support

Arrangements are made for medical services for contaminated injured individuals.[34]

(This note is in NUREG 0654, REP-1, Rev. 1, and in Supp. 1)

NUREG CRITERION

L.1. ***Each organization [Supp. 1 says "Offsite Response Organization"] shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, including assurance that persons providing these services are adequately prepared to handle contaminated individuals.***

Explanation

This criterion refers to the arrangement of medical care for the general public, not for members of the Licensee's utility staff. One primary local hospital and one backup hospital for each site should be designated for the evaluation and emergency treatment of contaminated, injured, or exposed[35] members of the general public. The primary local and backup hospitals for members of the general public may be the same as those for the utility employees and emergency workers. At a minimum, one of the hospitals should be located at least 5 to 10 miles outside the plume EPZ.

State or local governments should obtain written agreements with the hospitals/medical facilities, medical transportation providers, and technical staff (those that are not employed by the hospital/medical facility). These agreements should be identified in the plans. More details regarding LOAs for medical transportation providers are discussed under Criterion L.4. The written agreements should contain simple assurances that the providers have adequate technical information (e.g., treatment protocols) and treatment capabilities for handling contaminated, injured, or exposed individuals. If State or local governments do not obtain written agreements, the Licensee should obtain written agreements with the listed hospitals/medical facilities, medical transportation providers, and technical staff. If good faith efforts are not successful in a particular case, the Licensee should provide or arrange for adequate compensatory measures (e.g., obtain written agreements with other providers or provide temporary field medical care).

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[34] The availability of an integrated emergency medical services system and a public health emergency plan serving the area in which the facility is located and, as a minimum, equivalent to the *Public Health Service Guide for Developing Health Disaster Plans*, 1974, and to the requirements of an emergency medical services system as outlined in the Emergency Medical Services System Act of 1973 (PL 93-154 and amendments in the 1979 PL 96-142 should be a part of and consistent with overall State or local disaster control plans and should be compatible with the specific overall emergency response for the facility.

[35] Contaminated, injured, or exposed means (1) contaminated with radioactive material that cannot be removed by the simple methods described in Criteria J.12. and K.5.b.; (2) contaminated and otherwise physically injured; or (3) exposed to high levels of radiation. (Note: The term "high" refers to doses of 100 rem TEDE or greater.)

LOAs should state hospital/medical facility name; location of facility; type of capabilities; approximate number of contaminated, injured, or exposed patients that can be treated; and type of accreditation (e.g., Joint Commission on Accreditation of Hospitals [JCAH], if any). LOAs should also be included for technical staff who are not employed by the hospital/medical facility and should include name(s) of organization(s) that would supply technical staff and the type of services that would be provided.

Primary and backup facility capabilities should be addressed in a separate hospital/medical facility plan or SOP; it is imperative that these items be provided for review. The plan should describe the person (by title) who is in charge of coordinating this program, as well as the number of radiologically trained medical personnel available. Hospitals/medical facilities should have at least one physician and one nurse who are capable of supervising the evaluation and treatment of contaminated, injured, or exposed patients. The plan should specify that the physician will be present or readily available at all times during the operation of the Radiation Emergency Area (REA). A listing of such staff should be included or referenced in the hospital/medical facility plan. Although not required, a health physics technician or medical physicist should be available to assist the medical staff.

Hospital plans or procedures should describe the following:

1. The maximum number of contaminated, injured, or exposed patients that could be treated at one time;

2. Procedures that would be used if an overflow occurred;

3. Approximate response time (the time required to establish controlled areas and to assemble and fully prepare the necessary medical/radiological staff);

4. Details of notification, including a list of pertinent information that would be received regarding the incident and patients;

5. Staff who would be present and their responsibilities;

6. En route communications methods;

7. The incoming emergency vehicle route;

8. A list of equipment available to the staff, including personal protective gear (e.g., gloves, booties);

9. Procedures for preparation of the decontamination area, including the use of floor coverings, filtered ventilation systems, and appropriate radiation warning signs;

10. A diagram of the treatment and decontamination area, including a buffer zone separating the REA from the rest of the facility.

11. Procedures for decontamination of patients, including contamination control, disposal of contaminated waste and re-monitoring after decontamination;

12. A listing of staff that would be mobilized during a response; and

13. An example of the system used to record patient data.

In addition, hospital plans or procedures should contain the following information regarding hospital staff dosimetry. Plans or SOPs should describe procedures used by the hospital staff (e.g., REA hospital staff, general hospital staff if the hospital is located in the plume EPZ) to obtain their dosimetry. Plans should identify (by title) the organization (i.e., State/local emergency management agency or utility [if hospital provides care to both the utility and the public sector]) that has the responsibility of issuing dosimetry to the hospital staff. In some cases, both parties issue dosimetry. Plans should identify the person or organization that has the ultimate responsibility for exposure record keeping (including processing) and the mechanism for obtaining exposure records in special cases where dosimetry is not issued by the organization responsible for final record keeping.

The plans or procedures should:

1. Reference written agreements or LOAs with hospitals/medical facilities that are on file;

2. Reference written agreements or LOAs for technical staff that are not employed by the hospital/medical facility that are on file;

3. Include individual facility capabilities, including the number of radiologically trained medical personnel and support staff;

4. Describe hospital and support service operations for treating contaminated, injured, or exposed individuals; and

5. Describe dosimetry procedures, including record keeping and final receipt for processing.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

L.2. ***Each Licensee shall provide for onsite first aid capability.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

L.3. ***Each State shall develop lists indicating the locations of public, private and military hospitals and other emergency medical service facilities within the State or contiguous States considered capable of providing medical support for any contaminated injured individual. The listing shall include the name, location, type of facility and capacity, and any special radiological capabilities. These emergency medical services should be able to radiologically monitor contamination personnel, and have facilities and trained personnel able to care for contaminated injured persons.***

Explanation

The explanation for Criterion L.1. addressed the need for establishing a designated primary and backup hospital for treatment of contaminated injured individuals. Criterion L.3. concerns required information for *additional* hospitals/medical facilities in the area that would be available to assist with overflow from the designated primary and backup facilities. This list will enable State and local officials to direct members of the general public to those institutions capable of handling "contaminated, injured, or exposed" patients. This list must include the following for each facility:

- Name.
- Location.
- Type (differentiate between primary and backup facilities).
- Capacity (differentiate between ambulatory and nonambulatory). (Ambulatory capacity means the hospital/medical facility's capacity to treat individuals on an outpatient basis. Outpatient capacity is the number of individuals that the facility can handle per day during an emergency without regard to hospitalization for treatment of radiological contamination or exposure. Nonambulatory capacity refers to the facility's inpatient capacity, or the total number of available beds in a facility without regard to treatment of radiological contamination or exposure).

- Any special radiological capabilities, which might include the availability of specific radiologically trained staff (e.g., health or medical physicist), the types of monitoring equipment available, and the facility's capabilities for analyzing samples for internal and external contamination.

This information should be provided in the form of a matrix or as a list and should be included in an appendix listing resources.

The plan or procedures need to include a list of additional hospitals/medical facilities capable of providing medical support for contaminated, injured, or exposed individuals.

Plan(s) That Should Include This Information

Licensee ___ State X Local ___

NUREG CRITERION

L.4. ***Each organization shall arrange for transporting victims of radiological accidents to medical support facilities.***

Explanation

The transportation of radiologically contaminated, injured, or exposed individuals to medical support facilities involves more than moving an individual from the accident scene to a hospital/medical facility. For this criterion, it is essential to review transportation providers' SOPs as well as LOAs for transportation providers. LOAs should include the name of the organization, the type of services that will be provided, and the maximum number of vehicles that can be provided.

Consequently, plans and SOPs should sufficiently address the vehicles, equipment, procedures, and personnel needed for medical transportation support and establish priorities between the need to address radioactive contamination and the need for prompt transportation to a medical facility for patients with an urgent medical condition. The following topics should be included in this discussion.

1. ***Appropriate Medical Facility.*** Plans or SOPs should identify (by title) the person who is responsible for determining the appropriate hospital/medical facility to which a contaminated, injured, or exposed individual is transported. Plans or SOPs should include the process for selecting a facility based on the extent of contamination and nature of the injuries. For example, individuals with urgent medical conditions (e.g., heart attack, serious injury) should be transported directly to the nearest hospital regardless of the radioactive plume conditions.

2. ***Transport of Individuals.*** The early symptoms of persons exposed to high levels of radiation may be limited to nausea and vomiting; ambulances may not be required to transport such exposed individuals to a hospital/medical facility. Nonspecialized vehicles (e.g., auto, van, or bus) or specialized vehicles (e.g., ambulance, med vac, critical care unit) may be used; use of these resources should be supported by written agreements. Two factors should be used in determining which type of vehicle is appropriate: (a) the type and severity of the medical problems encountered, and (b) the need for trained emergency services personnel. SOPs for transportation providers should include the procedures for making such a decision. Plans or SOPs should address procedures for requesting additional emergency medical services, as well as procedures that would be followed if an individual were found to be contaminated or internally exposed after being monitored at a reception center.

3. ***Maintaining Communications.*** Plans or SOPs should describe the communication procedures for transport crews to follow when transporting an individual to a hospital/medical facility. These procedures should ensure that vehicle crews maintain communication with the receiving hospital/medical facility so that advance preparations for treatment of a contaminated, injured, or exposed individual can be initiated. The procedures should identify (by title) the person who would receive notification from the transport crew and who in turn would notify the REA staff to begin setup. The procedures should include a list of information that should be provided to the receiving hospital/medical facility (e.g., data on the individual's physical condition, vital signs, type of radiological contamination, and estimated time of arrival [ETA]).

4. ***Monitoring of Individuals.*** Plans or SOPs should identify (by title) the person who will perform the monitoring function to determine the nature and extent of external radiological contamination of an individual. The monitoring may be performed by Licensee personnel, health physics technicians, or members of the transport crew. If plans state that Licensee personnel will perform radiological monitoring and contamination control functions involved in the transportation of contaminated, injured, or exposed individuals, such arrangements should be documented in the plans and supported by written agreements.

   Plans or SOPs should also describe the procedures for monitoring, whether it is performed in the field prior to transport or immediately upon arrival at the hospital/medical facility. If individual monitoring is deferred to the hospital/medical facility, plans should state that the vehicle crew will assume that the individual is contaminated and employ appropriate contamination control measures. Plans should also describe the procedures for use of equipment (e.g., type of instrumentation, required labeling, calibration procedures, responsiveness to an identified check-source, and use of earphones or a speaker so that the individual monitoring can watch the movement of the survey instrument probe to avoid the distraction of reading the monitor).

5. ***Contamination Control Measures.*** Plans or SOPs should describe the contamination control measures to be followed during transport of contaminated, injured, or exposed individuals. Examples of contamination control methods include use of gloves to prevent spreading contamination, lining the patient area of the vehicle with a protective covering or wrapping the individual in a sheet or blanket, and covering the survey instrument probe with thin plastic to minimize possible contamination. Because these actions are only for controlling the spread of contamination and will not provide protection of the patient or the attendants from radiation, contamination control efforts should not be carried out if they would delay urgent medical care for the patient.

6. ***Decontamination Measures.*** Plans or SOPs should describe decontamination procedures and provide the action levels that would be used for the vehicle crew and vehicle, if they were found to be contaminated upon arrival at the hospital/medical facility. The action levels should correspond to the radiological monitoring equipment being used. The plan or SOPs should state if decontamination would take place at another area or site.

7. ***Dosimetry.*** Plans or SOPs should describe procedures used by the transport crew to obtain their dosimetry. Plans should identify the organization (e.g., State/local emergency management agency, utility [if onsite services are provided]) that has the responsibility for issuing dosimetry to the transport crew.

   If both parties issue dosimetry (emergency management agency and utility), plans should state who has the ultimate responsibility for exposure record keeping (including processing) and the mechanism for obtaining exposure records in special cases where dosimetry is not issued by the organization responsible for final record keeping.

The plan or procedures should describe:

1. The method for determining an appropriate hospital/medical facility, including the title of the person who is responsible for such determination;

2. Means for transporting individuals (including request[s] for additional emergency medical services and LOAs for transportation providers);

3. Procedures for communications between the transport crew and hospital/medical facility staff;

4. Specifics of radiological monitoring;

5. Contamination control measures during transport;

6. Decontamination techniques, including action levels; and

7. Dosimetry procedures for the transport crew.

Plan(s) That Should Include This Information

Licensee X State X Local X

13. Planning Standard M – Recovery and Reentry Planning and Post-Accident Operations

General plans for recovery and reentry are developed.

NUREG CRITERION

M.1. ***Each organization, as appropriate, shall develop general plans and procedures for reentry and recovery and describe the means by which decisions to relax protective measures (e.g., allow reentry into an evacuated area) are reached. This process should consider both existing and potential conditions.***

Explanation

At the time that NUREG-0654 was published, "recovery and reentry" was used as a general term referring to the activities that occur after the initial phase of an emergency. Since then, the revised EPA PAGs[36] described the three phases of an accident as (1) the early phase (initial response and protective actions); (2) the intermediate phase (continuing response and protective actions to protect the public from deposited radioactivity); and (3) the late phase (recovery). The plan should include general information on the activities to be performed and actions to be taken during the intermediate and late phases of an accident. Under the updated guidelines, these actions could address the following topics:

1. ***Relocation.*** Some people or households may need to be removed or continue to be excluded from contaminated areas to avoid chronic radiation exposure. The plan should provide for relocation as a possibility after an accident and outline what the organization's responsibilities would be in this event, including decision making, notification, and provision of physical and/or economic assistance.

2. ***Reentry.*** Certain individuals who have been evacuated or relocated from a restricted zone may be allowed to reenter under controlled conditions to perform additional emergency response activities or to carry out specific types of personal business. For example, farmers may be permitted to reenter to provide essential care for livestock. The plan should include information on the types of reentry that may be permitted and under what conditions they would be permitted. Some of the conditions include (1) use of access control points to issue dosimetry and train reentering individuals on the appropriate use of dosimetry; (2) use of stay times, depending upon the location of the reentry destination; (3) use of health physics escorts; and (4) provision of monitoring and decontamination for exiting individuals.

[36] *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001, May 1992.

3. ***Return.*** Previously evacuated persons are permitted to return to areas that have been cleared for unrestricted residence. Evacuated areas must be found to be below radiation protection criteria for relocation before the evacuated or relocated persons are allowed to return to their homes and businesses. The plan should describe the process for determining which areas are safe (i.e., meet the radiation protection criteria for relocation) and should include information on which organizations are responsible for performing the appropriate tests and certifying that an area is safe.

4. ***Recovery.*** The term "recovery" refers to the process of reducing radiation exposure rates and concentrations of radioactive material in the environment to levels safe enough for the general public to return to an area for unconditional occupancy or use after the initial phase of the radiological emergency. In areas where deposition occurred, procedures to reduce or remove the radioactive materials may need to be developed. The plan should acknowledge that this is a possibility and include information on which organizations are responsible for determining the necessity for and carrying out of such cleanup operations.

   During the intermediate and late phases of an accident, assessment of the accident will continue. Activities will include (1) air and soil sampling and analysis, (2) dose assessment and projection, and (3) establish the restricted zone(s) and the buffer zone(s). It will be necessary to formulate procedures to protect persons who have not been relocated because they live in or use areas contaminated by radiation at levels below the dose for relocation. It will also be necessary to establish controls for reentry (as described above in item 2). All of the procedures developed after the accident to support relocation and return decisions will be based on a comparison of EPA PAGs to potential long-term dose to the public caused by materials deposited after an accident.

The plan or procedures should describe actions to be taken during the intermediate and late phases of an accident, including:

1. Continuing environmental radiation measurements and dose assessment;

2. Procedures for establishing restricted and buffer zones;.

3. Procedures for relocation;

4. Procedures for controlled reentry into the restricted areas;

5. Procedures for return of the public to previously evacuated areas; and

6. General procedures for recovery, including a listing of actions that may be needed and organizational responsibilities for carrying out these activities.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

M.2. ***Each Licensee plan shall contain the position/title, authority, and responsibilities of individuals who will fill key positions in the facility recovery organization. This organization shall include technical personnel with responsibilities to develop, evaluate, and direct recovery and reentry operations. The recovery organization recommended by the Atomic Industrial Forum's "Nuclear Power Plant Emergency Response Plan" dated October 11, 1979,[37] is an acceptable framework.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

M.3. **Each Licensee and State plan shall specify means for informing members of the response organizations that a recovery operation is to be initiated, and of any changes in the organizational structure that may occur.**

Explanation

State and local plans should include information on the means for keeping all of the involved response organizations informed of procedures developed and actions to be taken during the intermediate and late phases of an accident.

The plan should indicate:

1. Means that will be used to keep all involved response organizations (e.g., local Offsite Response Organizations with affected populations and/or areas) informed of the recovery phase plans and procedures being developed, such as what the remedial measures will be, how long they will take, and what the final outcome is expected to be; and

2. Changes that might take place in the organizational structure (e.g., the Governor being in charge under a "state of emergency" that may then revert to a new or other authority).

[37] The Atomic Industrial Forum's plan has been superseded by *Functional Criteria for Emergency Response Facilities*, NUREG-0737, Supplement 1, January 1983, according to the Addenda to NUREG-0654/FEMA-REP-1, Rev.1.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

M.4. ***Each plan shall establish a method for periodically estimating total population exposure.***

Explanation

The purpose of this criterion is to provide a basis for an after-the-fact estimate of the radiological impact of the accident in terms of health effects. The plan and procedures should include information about how the State will estimate the total population exposure from all pathways caused by the accident. The dose assessment process is usually performed by one or more Federal agencies in coordination with the State agencies.

The plan and procedures should identify the appropriate (responsible) agencies that will be involved in long-term dose assessment activities after an accident.

Plan(s) That Should Include This Information

Licensee X State X Local X

14. Planning Standard N – Exercises and Drills

Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

NUREG CRITERION

N.1.a. ***An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The emergency preparedness exercise shall simulate an emergency that results in offsite radiological releases that would require response by offsite authorities. Exercises shall be conducted as set forth in NRC and FEMA rules.***

Explanation

Once plans have been developed and staff trained in their response functions, an exercise is conducted to demonstrate that response capabilities described in the plan can actually be implemented.

The plan should state that exercises will be conducted in accordance with NRC and FEMA rules (as described in Criterion N.1.b.).

Other criteria specified in this Planning Standard and discussed below provide more detail on how the plan should address the exercise process.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

N.1.b. ***An exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response. The organization shall provide for a critique of the biennial exercise by Federal and State observers/evaluators[38]. The scenario should be varied from exercise to exercise such that the major elements of the plans and preparedness organizations are tested within a six-year period. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m.once every six years. Exercises should be conducted during different seasons of the year within a six-year period for exercising under various conditions. At least one exercise over a period of six years should be unannounced.***

[38] Changes have been made to this criterion as specified by GM PR-1.

Explanation

This criterion addresses several periodic exercise requirements, all of which were modified by GM PR-1, *Policy on NUREG-0654/FEMA-REP-1 and 44 CFR Periodic Requirements*. The most important change is that the policy now permits the testing of major planning and preparedness elements within a six- rather than a five-year period. GM PR-1 and REP-14 also make the following clarifications regarding the content of State and local plans.

1. ***The Six-Year Exercise Period.*** The exercise period specified in this criterion begins with the date of the first joint (utility and State and local governments) exercise conducted after November 3, 1980 (the effective date of the NRC Final Regulations on Emergency Planning, 10 CFR § 50 [Appendix E]) (45 FR 55410, August 19, 1980) and the issuance of NUREG-0654, FEMA-REP-1, Rev. 1, November 1980. All of the major elements are to be tested at least once every six years on a site-specific basis except for ingestion-related elements; the testing of these elements is not tied to a particular site for State governments (see item 3 below).

2. ***Exercise Scenarios.*** Scenarios should be sufficiently varied so that all of the major elements of the plans and preparedness of offsite organizations are tested within a six-year period. The major elements of plans and preparedness are incorporated in the six Evaluation Areas contained in this document.

3. ***Frequency of Ingestion Pathway Exercises.*** A State should fully participate in the ingestion pathway portion of exercises at least once every six years. In States that contain more than one site, the State should rotate this participation from site to site. Partial participation by a State in ingestion pathway activities at sites within that State is not required. During the year in which the full-participation ingestion exercise is held at one of the sites, the applicable State and local governments should review their plans and procedures for the other sites within the State to verify the accuracy and completeness of those plans. The ingestion pathway portion of an exercise should include the local plans and preparedness as well as the State response. This review and any resultant revisions should be made and reported in the Annual Letter of Certification as part of the States' annual review and plan update.

   A State that has ingestion-pathway-related responsibilities for a site located within its borders and that is also within the 50-mile ingestion exposure pathway of a site located in a bordering State should partially participate in all of the ingestion-related exercises for those sites located in bordering States. States that do not have a power plant located within their borders, but are located within the 50-mile EPZ of a bordering State's power plant, should fully participate in at least one ingestion-related exercise every six years.

4. ***Ingestion Pathway Exercise Participants.*** The definition of full participation in ingestion pathway aspects of exercises is guided by 44 CFR § 350.2(j). Although State and Tribal officials have primary responsibility for the ingestion portion of exercises, local governments may have support and protective action responsibilities that would require their participation in such exercises. The number and function of personnel needed should be sufficient for carrying out ingestion measures required for a particular accident scenario. Also, organizations fully participating in the ingestion pathway portion of an exercise should deploy field teams to secure and analyze media samples as required by the accident scenario.

   As noted above, State officials would be primarily involved in the ingestion pathway portion of exercises. The number and function of State personnel needed should be determined by verifying the State's capabilities for carrying out the following responsibilities: direction and control, communications, accident assessment, protective action decision making, and dissemination of emergency information to the general public and/or organizations involved with ingestion measures.

5. ***Partial Participation in Ingestion Pathway Exercises.*** The definition of partial participation in ingestion pathway aspects of exercises is guided by 44 CFR § 350.2(k). State emergency personnel would be primarily involved in the ingestion portion of the exercise. The number and function of State personnel needed should be determined by verifying the State's capabilities for carrying out the following responsibilities: direction and control and related communications for protective action decision making and dissemination of emergency information to appropriate individuals, groups, and the general public. Organizations partially participating in the ingestion portion of an exercise will not have to deploy field teams to secure and analyze media samples.

6. ***Off-Hours Exercises.*** Offsite organizations should make provisions to start an exercise or drill between 6:00 p.m. and 4:00 a.m. weekdays or any hours on weekends at least once every six years. This objective may be demonstrated by either an off-hours exercise or an off-hours drill. For an off-hours drill, participants should demonstrate the capability to mobilize at least one key staff member to the EOC. The key staff member should contact additional staff by telephone or other means as described in the plan and inquire about the availability of staff to report to duty stations and about their estimated time of arrival. The key staff member should also establish communication links with other EOCs[39].

7. ***Weather Conditions.*** Offsite organizations may schedule exercises at different seasons over a six-year period to increase the likelihood for exercising various

[39] The requirement for off-hours exercises is under review and may be changed via a Federal Register notice.

weather conditions. This provision can also be fulfilled through scenario design and controller injects (see item 2).

8. ***Unannounced Exercises.*** Offsite organizations should participate in unannounced exercises or drills at least once every six years. The unannounced exercise or drill should take place during a specified seven-day period, provided to all exercise players. However, notification of the designated day within the seven-day window will be made only to those with a need to know, such as exercise controllers. The unannounced exercise or drill may be conducted in conjunction with an off-hours exercise or drill, or the two objectives may be demonstrated separately[40].

9. ***Combining Requirements.*** Items 2, 3, 6, 7, and 8 may be combined in the same exercise or addressed in separate exercises within a six-year period.

The plan should indicate that:

1. All major elements of the plan will be tested at least once every six years;

2. Scenarios for exercises will be varied from exercise to exercise to allow all organizations having a role to demonstrate their preparedness;

3. The State will participate in the ingestion portion of exercises at least once every six years;

4. The number and types of personnel participating in ingestion aspects of an exercise will be sufficient for carrying out those ingestion measures required by the accident scenario;

5. Applicable organizations will make provisions to conduct an exercise or drill during off-hours at least once every six years;

6. Exercises will be conducted during different seasons over a six-year period; and

7. Organizations will participate in unannounced exercises or drills at least once every six years.

Plan(s) That Should Include This Information

Licensee X State X Local X

[40] The requirement for unannounced exercises is under review and may be changed via Federal Register notice.

NUREG CRITERION

N.2. ***A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise. A drill shall be supervised and evaluated by a qualified drill instructor. Each organization shall conduct drills, in addition to the biennial exercise, at the frequencies indicated below:***

N.2.a. ***Communications Drills: Communications with State and local governments within the plume exposure pathway EPZ shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually. Communication drills shall also include the aspect of understanding the content of messages.***

Explanation

Communications with organizations that have a role in the emergency response should be tested at the intervals specified above. These tests should include more than just the assurance that the communications hardware is functioning properly. The plan needs to ensure that the nature of the messages that are likely to be transmitted in an emergency will be understood by the receiving organization. This goal could be accomplished by structuring the drills to include a "content check" through the use of the actual messages or notifications that would be made to the receiving organization in an emergency.

The plan should indicate that:

1. State and local communication systems will be tested monthly;

2. Communications with the Federal response organizations and States within the ingestion pathway will be tested quarterly;

3. Communications with the nuclear facility, State and local EOCs, and field assessment teams will be tested annually; and

4. All communications drills will include a message "content check."

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

N.2.b. ***Fire Drills: Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.***

Licensee X State __ Local __

NUREG CRITERION

N.2.c. ***Medical Emergency Drills: A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies (i.e., ambulance and offsite medical treatment facility) shall be conducted annually. The offsite portions of the medical drill may be performed as part of the required biennial exercise.***

Explanation

Medical drills are conducted to demonstrate that procedures for transporting contaminated, injured, or exposed individuals to the appropriate medical facility can be implemented. The drills enable medical facility staff to demonstrate proper care of contaminated, injured, or exposed persons at appropriately equipped facilities. The focus of these drills is contamination control measures, not medical protocols *per se.* The exception pertains to modification of contamination control procedures and decisions on transportation to a medical facility in the event that the individual has an urgent medical condition. The medical drill may be held in conjunction with an evaluated exercise.

Organizations should ensure that their plans address the following requirements:

1. Provisions are made for conducting the appropriate drills for contaminated, injured, or exposed individuals.

2. The drills provide opportunity for responders to determine the nature and extent of external radiological contamination of the individual. This demonstration may be performed in the field prior to transport to the medical facility or immediately upon arrival at the medical facility. If monitoring is deferred until arrival at the medical facility, the vehicle crew should assume that the individual is contaminated and follow appropriate contamination control measures. Medical priorities should be established so that if the individual has an urgent medical condition, radiological monitoring and contamination control measures should not be undertaken if it would delay addressing the individual's medical concerns.

3. Personnel responsible for transporting individuals from the accident site follow appropriate contamination control measures.

4. An appropriate official determines which medical facility the individual will be taken to and the individual is transported without undue delay.

5. Communications are maintained with the receiving medical facility.

6. The vehicle and occupants are monitored to detect the nature and extent of radiological contamination and decontaminated if necessary.

7. At the medical facility, appropriate staff members are present or available on short notice.

8. The medical facility completes preparations for the arrival of the individual and sets up appropriate contamination control measures.

9. Medical facility personnel are able to demonstrate the capability to determine whether individuals are contaminated and demonstrate the procedures and equipment to remove contamination.

10. Medical facility personnel maintain contamination control measures including contaminated waste disposal during and after treatment of the individual.

Plan(s) That Should Include This Information

Licensee X State ___ Local X

NUREG CRITERION

N.2.d. ***Radiological Monitoring Drills: Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually. These drills shall include collection and analysis of all sample media (e.g., water, vegetation, soil, and air), and provisions for communications and record keeping. The State drills need not be at each site. Where appropriate, local organizations shall participate.***

Explanation

The organization's plans should state that radiological monitoring drills will be conducted annually (and evaluated by FEMA at least biennially). The radiological monitoring drill may be held in conjunction with an evaluation exercise. Guidance on what topics the drills should cover is provided in Evaluation Area 1, Criteria 1.a.1., 1.d.1., 1.e.1., and 4.b.1.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

N.2.e. ***Health Physics Drills (1): Health physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment. The State drills need not be at each site.***

Explanation

The organization's plans should state that health physics drills will be conducted semi-annually. As a guide to what topics the drills should cover, Evaluation Area, Criteria 1.a.1., 1.d.1., 1.e.1., and 4.a.1.– 4.a.3. may be used.

Plan(s) That Should Include This Information

Licensee X State X Local ___

NUREG CRITERION

N.2.e. ***Health Physics Drills (2): Analysis of in-plant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by Licensees annually.***

Plan(s) That Should Include This Information

Licensee X State ___ Local ___

NUREG CRITERION

N.3. ***Each organization shall describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives. Pending the development of exercise scenarios and exercise evaluation guidance by the NRC and FEMA the scenarios for use in exercises and drills shall include, but not be limited to, the following:***

a. the basic objective(s) of each drill and exercise and appropriate evaluation criteria;

b. the date(s), time period, place(s), and participating organizations;

c. the simulated events;

d. a time schedule of real and simulated initiating events;

e. a narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and

f. a description of the arrangements for and advance materials to be provided to official observers.

Explanation

The organization's plan should state that each of the items (a through f) above will be addressed in the scenario developed for the exercise. The "Milestones and Tasks" section of this document (Section IV.A.) will be useful in guiding the development of the exercise scenario.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

N.4. ***Official observers from the State or local governments will observe, evaluate, and critique the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation should result from the critique.***

Explanation

The organization's plan should state that the exercise will be observed by official evaluators who will observe, evaluate, and critique the exercise. The plan should also state that after the exercise, a critique will be conducted. The "Milestones and Tasks" section of this document (Section III.A.) provides guidance on how exercise evaluation and post-exercise critiques should be conducted.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

N.5. ***Each organization shall establish means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, and for assigning responsibility for implementing corrective actions. Each organization shall establish management control used to ensure that corrective actions are implemented.***

Explanation

The organization's plan should reference the process for correcting issues identified during exercises. This process should include a description of the issue, the organization and individual (by title) responsible for implementing the chosen corrective action, as well as the time frame for completing the corrective action. The results of exercises and verification that any plan changes and training identified as a result of these exercises have been completed should be included in the State's Annual Letter of Certification and the annual update, with the exception of Deficiencies.

The plan should reference the process for correcting issues identified during exercises and identify the person or organization responsible for this process.

Plan(s) That Should Include This Information

Licensee X State X Local X

15. Planning Standard O – Radiological Emergency Response Training

Radiological emergency response training is provided to those who may be called on to assist in an emergency.[41]

NUREG CRITERION

O.1. ***Each organization shall assure the training of appropriate individuals.***

Explanation

The plan should identify organization(s) that have the responsibility for coordinating radiological-specific training. The plan should also state that the responsible organization will ensure the participation of appropriate personnel in training courses sponsored by the State and Federal governments that are designed for individuals (e.g., transportation providers, radiological monitors) who will be called upon to assist in radiological emergency response operations. Training should include procedures for initial notification, basic radiation protection (including dosimetry and KI use), and review of evacuation routes. The plan should identify organization(s) that will ensure that radiological emergency response training will be included as part of fire, police, and ambulance/rescue training, if appropriate for the organization. Training for hospital personnel, ambulance/rescue teams, and police and fire departments should include the procedures for notification, basic radiation protection, and expected roles.

The plan or procedures should identify the following:

1. The organization that is responsible for the coordination of radiological training;

2. The organization that will ensure that radiological emergency response training will be included as part of fire, police, and ambulance/rescue training, if appropriate; and

3. The organization that will ensure that appropriate personnel participate in training courses designed for individuals (e.g., transportation providers) who will assist in radiological emergency response activities.

Plan(s) That Should Include This Information

Licensee X State X Local X

[41] Applicable to Criteria O.1–O.5: The *Annual Letter of Certification Review Guide (Section IV.A of the manual)* requires certification that initial training and annual retraining of personnel have been conducted.

NUREG CRITERION

O.1.a. ***Each facility to which the plan applies shall provide site-specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

O.1.b. ***Each Offsite Response Organization shall participate in and receive training. Where mutual aid agreements exist between local agencies such as fire, police, and ambulance/rescue, the training shall also be offered to the other departments that are members of the mutual aid district.***

Explanation

See Criterion O.1. If mutual aid plans have been established between local agencies, applicable plans should state that training will be offered to the mutual aid district.

Plan(s) That Should Include This Information

Licensee __ State X Local X

NUREG CRITERION

O.2. ***The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills in which each individual demonstrates ability to perform his or her assigned emergency function. During the practical drills, on-the-spot correction of erroneous performance shall be made and a demonstration of the proper performance offered by the instructor.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

O.3. ***Training for individuals assigned to Licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.***

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

O.4. ***Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs (including the scope, nature, and frequency) shall be provided in the following categories:***

O.4.a. ***Directors and coordinators of the response organizations.***

Explanation

If State, Tribal, and local governments are deficient in the capability and resources to accomplish this training, they should state what organization (e.g., Licensee, FEMA) they would call on for assistance.

The plan should discuss:

1. Training programs that are specific to directors/coordinators;
2. The scope of the training programs;
3. The time intervals at which these training programs will be offered; and
4. Organization (e.g., Licensee, FEMA) that will provide training assistance, if applicable.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

O.4.b. ***Personnel responsible for accident assessment.***

and

O.4.c. ***Radiological monitoring teams and radiological analysis personnel.***

Explanation

The plan should discuss training programs that are specific to:

1. Accident assessment personnel; and

2. Radiological monitoring teams and radiological analysis personnel.

All training programs should include the provisions listed under Criterion O.4.a.

Plan(s) That Should Include This Information

Licensee X State X Local *

* NRC and FEMA encourage State, Tribal, and local governments that have these capabilities to continue to include them in their training programs.

NUREG CRITERION

O.4.d. ***Police, security, and fire-fighting personnel.***

Explanation

The plan should discuss training programs that are specific to police, security, and fire fighting personnel and include the provisions listed under Criteria O.1. and O.4.a.

Plan(s) That Should Include This Information

Licensee X State * Local *

* NRC and FEMA encourage State, Tribal, and local governments that have these capabilities to continue to include them in their training programs.

NUREG CRITERION

O.4.e. ***Repair and damage control/correctional action teams (onsite).***

Licensee X State __ Local __

NUREG CRITERION

O.4.f. ***First aid and rescue personnel.***

Explanation

The plan should discuss training programs that are specific to first aid and rescue personnel and include the provisions listed under Criterion O.4.a.

Plan(s) That Should Include This Information

Licensee X State * Local X

* NRC and FEMA encourage State, Tribal, and local governments that have these capabilities to continue to include them in their training programs.

NUREG CRITERION

O.4.g. ***Local support services personnel, including Civil Defense/Emergency Service personnel*** [42]

Explanation

The plan should discuss training programs that are specific to support services personnel and include the provisions listed under Criterion O.4.a.

Plan(s) That Should Include This Information

Licensee X State __ Local X

[42] Civil Defense/Emergency Service personnel are also referred to as Emergency Management personnel.

NUREG CRITERION

O.4.h. ***Medical support personnel.***

Explanation

The plan should discuss training programs that are specific to medical support personnel and include the provisions listed under Criterion O.4.a., including specific training for hospital staff and transportation providers.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

O.4.i. ***Licensee's headquarters support personnel.***

Licensee X State __ Local __

NUREG CRITERION

O.4.j. ***Personnel responsible for transmission of emergency information and instructions.***

Explanation

The plan should discuss training programs that are specific to personnel responsible for transmission of emergency information and instructions and include the provisions listed under Criterion O.4.a.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

O.5. ***Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.***

Explanation

The plan should state that organizations will provide initial training of personnel as well as retraining on an annual basis. A description of the types and sources of training

courses available to emergency personnel should be listed in the plan. The plan may include (1) a training matrix that lists all available courses and provides general descriptions of those courses and (2) names of the organizations requiring training and the type of training that they require.

The plan or procedures should:

1. State which organization will provide initial training, as well as retraining, of personnel; and

2. Include a complete training matrix as described above.

Plan(s) That Should Include This Information

Licensee X State X Local X

16. Planning Standard P — Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans

Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

NUREG CRITERION

P.1. ***Each organization shall provide for the training of individuals responsible for the planning effort.***

Explanation

The plan should describe the training provided to emergency planners and specify the training regimen for positions responsible for oversight of plan development and maintenance (including the positions referred to in Criteria P.2. and P.3.) and any other positions with planning responsibilities.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.2. ***Each organization shall identify (by title) the individual with the overall authority and responsibility for radiological emergency response planning.***

Explanation

The plan should identify, by title, the individual responsible for radiological emergency response planning.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.3. ***Each organization shall designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.***

Explanation

The plan should identify the Emergency Planning Coordinator, who may be the same person identified under Criterion P.2.; or the Criterion P.2. position may be the legally designated authority responsible for response and preparedness (e.g., the senior elected official), while the Emergency Planning Coordinator has operational responsibility for the planning and coordination (e.g., the County Emergency Management Director).

The plan should identify the individual (by title) who is responsible for developing and updating emergency plans as well as coordinating plans with other response organizations.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.4. ***Each organization shall update its plan and agreements, as needed, and review and certify it to be current on an annual basis. The update shall take into account changes identified by drills and exercises.***

Explanation

States are required to submit an Annual Letter of Certification to the appropriate FEMA Regional Director by January 31 of each year, certifying that (among other things) the State, Tribal, and local plans and agreements have been updated as needed and are current.

The reviewer should determine, by review of previous issues and responses, whether the plan is being actively updated to correct issues identified in drills and exercises. The latest exercise report should contain a table of issues and responses from previous drills and exercises. The reviewer should check whether the plan has been revised to resolve those issues involving corrections or changes to the plan.

The plan should include:

1. Evidence of such certification within the past year on a signature page or by reviewing the Annual Letter of Certification; and

2. Evidence that the plan is being actively updated to correct issues identified in drills and exercises, if appropriate.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.5. ***The emergency response plans and approved changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans. Revised pages shall be dated and marked to show where changes have been made.***

Explanation

The plan should contain a list of organizations and individuals who are provided with the plan and updates. The plan should also indicate the person (by title) who is responsible for distributing plan updates and what the update cycle is (e.g., updates are distributed by June 1 of each year). The update mechanism should clearly cover all procedures; in some cases, a suborganization, such as a school district, may be responsible for updating its own procedures. Revised pages should be appropriately dated and (preferably) marked with revision bars or some other indication of where changes were made. Where changes are so numerous or extensive that revision bars are impractical, a list or summary of changes should be supplied.

The plan should include:

1. A list of organizations and individuals who are provided with the plan and its updates;

2. An indication of the person (by title) who is responsible for distributing plan updates and what the update cycle is;

3. Markings or equivalent visual indications on revised pages to show where changes were made; and

4. A summary list of changes in cases where changes are so numerous or extensive that revision bars are impractical.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.6. ***Each plan shall contain a detailed listing of supporting plans and their sources.***

Explanation

The plan should contain a list of supporting plans, if any, such as local or municipal plans, school district emergency plans, hospital plans, etc.

The plan should include a list of supporting plans, if applicable.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.7. ***Each plan shall contain an appendix listing, by title, procedures required to implement the plan. The listing shall include the section(s) of the plan to be implemented by each procedure.***

Explanation

The body of the plan should include a list of all implementing procedures associated with the plan. The list should indicate what section(s) of the plan are implemented by each procedure. All of the procedures must be provided for review.

The plan should include a list of all implementing procedures that indicates what section(s) of the plan are implemented by each procedure.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.8. ***Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.***

Explanation

The plan should contain a table of contents and a table cross-referencing the plan to the NUREG-0654 criteria. The cross-reference table should be specific — it should address each criteria element and provide references to specific subparts of the plan. The cross-

reference should not merely indicate, for example, a plan chapter containing tens of pages; it should give references specific enough to allow reviewers to quickly locate the relevant information. While performing a plan review, however, a reviewer should use the NUREG cross-reference as a starting point only and not depend on it to identify all of the plan/procedure sections where applicable information is located. Where the reviewer locates additional information, it should be noted in the plan review so that the plan's cross-reference can be improved during the next plan update.

The plan should contain:

1. A specific table of contents; and

2. A table cross-referencing the plan to the NUREG-0654 criteria.

Plan(s) That Should Include This Information

Licensee X State X Local X

NUREG CRITERION

P.9. ***Each Licensee shall arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. (An independent review is one conducted by any competent organization either internal or external to the Licensee's organization, but who are not immediately responsible for the emergency preparedness program). The review shall include the emergency plan, its implementing procedures and practices, training, readiness testing, equipment, and interfaces with State and local governments. Management controls shall be implemented for evaluation and correction of review findings. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate Licensee corporate and plant management, and involved Federal, State, and local organizations, and retained for a period of five years.***

Explanation

Plan(s) That Should Include This Information

Licensee X State __ Local __

NUREG CRITERION

P.10. ***Each organization shall provide for updating telephone numbers in emergency procedures at least quarterly.***

Explanation

The plan should indicate the person (by title) or organization responsible for updating telephone numbers and the schedule (e.g., by calendar quarters) on which the updates are conducted. The criterion refers to emergency *procedures*; the plan should identify (by title) the person or organization responsible for quarterly updates of each procedure that contains telephone numbers. The update function may be centralized, or in some cases, different suborganizations may be responsible for updating their own procedures. Quarterly updates need not involve physical replacement of procedure pages if there are no changes; the objective is to ensure that someone *checks* quarterly to see if any of the numbers have changed.

The plan should indicate who is responsible for quarterly update of each procedure that contains telephone numbers.

Plan(s) That Should Include This Information

Licensee X State X Local X