

## **Spent Fuel Project Office Interim Staff Guidance - 16 Emergency Planning**

---

### **Issue**

Issuance of specific guidance for review of Emergency Plans for facilities licensed pursuant to 10 CFR Part 72 and removal of the reference to Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities," as included in NUREG-1567, Standard Review Plan for Spent Fuel Dry Storage Facilities (March 2000).

### **Regulatory Basis**

A description of the applicant's plan for coping with emergencies is required by 10 CFR 72.24(k). The specific requirements for an emergency plan and its contents are delineated in 10 CFR 72.32.

### **Applicability**

This guidance applies to facility reviews conducted in accordance with NUREG-1567, Standard Review Plan for Spent Fuel Dry Storage Facilities (March 2000).

### **Discussion**

In the *draft* version of NUREG-1567, Appendix C addressed the emergency planning requirements to demonstrate compliance with 10 CFR 72.32. The Staff determined that Appendix C reiterated the requirements of 10 CFR 72.32 and applicable portions of the guidance found in Regulatory Guide 3.67. Thus, in the final report, Appendix C was deleted, and a statement was inserted into NUREG-1567, Section 10.4.5, which states, "Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities," contains the principal guidance on preparation of emergency plans for independent spent fuel storage installations (ISFSIs)."

Upon reflection, however, the staff has determined that reference to Regulatory Guide 3.67 in NUREG-1567, which pertains to spent fuel dry storage facilities, could be misleading in that the regulatory guide was written prior to the promulgation of 10 CFR Part 72. Regulatory Guide 3.67 contains items that could apply to a facility under 10 CFR Parts 30, 40 or 70, but do not necessarily apply to facilities which fall under Part 72. Therefore, the staff decided to remove the reference to Regulatory Guide 3.67 and issue emergency plan review guidance applicable to facilities to be licensed pursuant to the regulatory requirements found at 10 CFR Part 72. This revised material will replace, in its entirety, Section 10.4.5 of NUREG-1567.

It remains the staff's position that Appendix C of the *draft* version of NUREG-1567 provided acceptable guidance applicable specifically to an ISFSI under 10 CFR Part 72. Therefore, neither the publication of NUREG-1567, nor this revision to Section 10.4.5 affects the evaluation findings of any review carried out utilizing the *draft* NUREG-1567.

**Recommendation**

NUREG-1567, Section 10.4.5, "Emergency Planning," shall be revised as follows:

Replace the existing text with the text contained in the Attachment to this Interim Staff Guidance.

Approved /RA/

**E. William Brach**

June 14, 2000

**Date**

Attachment: Revised Section 10.4.5, "Emergency Planning," of NUREG-1567.

# EMERGENCY PLANNING

## 1 REVIEW OBJECTIVE

The purpose of the review of the applicant's emergency plan is to ensure the plan (1) complies with regulatory requirements, (2) is based on the proposed independent spent fuel storage installation (ISFSI) or monitored retrievable storage facility (MRS), and (3) provides an acceptable hazards analysis.

An emergency plan (EP) can consist of several major components, one being the plan for the onsite response to emergencies and another, the plan for an offsite response. Because of the passive nature of the material being stored, the lack of a significant dispersal mechanism and the robust nature of the construction of the storage systems, the need for an offsite response (evacuation) is not expected. Therefore, as discussed in the statements of consideration for the Emergency Planning component of 10 CFR Part 72, there is no requirement in 10 CFR Part 72 that an offsite EP be submitted by the applicant for an ISFSI.

## 2 AREAS OF REVIEW

The regulatory requirements are delineated in 10 CFR 72.32. The regulations for the emergency plan for an away from reactor ISFSI [§72.32(a)] are slightly different from the regulations for an ISFSI or MRS that is authorized to process and/or repackage spent fuel [§72.32(b)]. 10 CFR 72.32(b) requires twice the number of communications checks, and radiological/health physics, medical, and fire drills. Additionally, 10 CFR 72.32 (b) requires more information under the Offsite Assistance paragraph. 10 CFR 72.32(c) provides requirements for an ISFSI located at a reactor facility.

## 3 FACILITY DESCRIPTION

### 3.1 Description of Facility and Site

The applicant may provide a detailed map of the site. An enlarged duplicate of the drawing suitable for use as a wall map may also be provided. The detailed map may be drawn to scale and show the following:

- ISFSI or MRS cask storage areas or storage structures, pool, dry transfer facilities, intermodal transfer stations, any holding areas for loaded transportation casks
- onsite structures and adjacent structures with descriptive labels (and building numbers, if applicable)
- other major site features, such as administrative and public access areas
- bar scale in both meters and feet

- compass indicating north
- onsite roads and parking lots
- onsite routes for transferring material to and from storage
- site, controlled area, and restricted area boundaries, including locations of gates
- liquid retention tanks and ponds (include note if tanks or ponds are potentially contaminated)
- roads, railroads, and navigable water in close proximity to the site
- rivers, lakes, streams, wetlands, or other ground water sources onsite and adjacent to the site

The applicant shall provide a concise description of all site features affecting emergency response, including communications and assessment centers, assembly and relocation areas, and emergency equipment storage areas. The emergency plan should identify any additional site features related to the safety of site operations.

### 3.2 Description of Area Near Site

The emergency plan may include a description of the principle characteristics of the area near the site at which licensed activities are to be conducted. The plan should include a general map (approximately 10 mile radius) and a U.S. Geological Survey topographical map. A map of the area surrounding the site (out to approximately 1 mile) should be included which provides the following information:

- locations of population concentrations (such as towns, cities, office buildings, factories, arenas, stadiums, hospitals, nursing homes, and recreational areas)
- locations of facilities (such as schools, arenas, stadiums, nursing homes, hospitals, prisons)
- identification of primary routes for access of emergency equipment or for evacuation, as well as potential impediments to traffic flow (such as rivers, drawbridges, railroad grade crossings)
- locations of fire and police stations, hospitals, and other offsite emergency support organizations (specify whether offsite emergency support organizations received training to handle exposure to radioactive contamination or toxic materials)

- sites of potential emergency significance (e.g. liquefied petroleum gas terminals, chemical plants, pipelines, electrical transformers, and underground cable)
- identification of the types of terrain and the land use patterns around the site

### 3.3 Types of Accidents

The emergency plan should identify and describe each type of radioactive material accident for which actions may be needed to prevent or minimize exposure from radiation and/or radioactive materials to onsite personnel for an ISFSI and both onsite and offsite personnel for an MRS. The accidents should be described in terms of the process and physical location where they could occur; how the accidents could occur (equipment malfunction, instrument failure, human error, etc.); possible contributing or complicating factors; and possible onsite and offsite consequences. The accident descriptions should include any non-radiological, hazardous material releases that could impact emergency response efforts.

### 3.4 Classification of Accidents

Regulations for ISFSI installations located away from a reactor site require only one level of emergency classification, an Alert. Regulations for ISFSI and MRS installations authorized to process and/or repackage spent fuel have two classes of accidents, Alert or Site Area Emergency. NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees," describes incidents involving radioactive material. An Alert is defined as incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite. A Site Area Emergency (SAE) is defined as an incident that has led or could lead to a significant release of radioactive or hazardous material and that could require a response by an offsite organization to protect persons offsite.

The emergency plan shall include the emergency actions levels at which an alert or SAE will be declared. The NRC accepts that an ISFSI or MRS may have a single emergency plan that provides for both nuclear and non-nuclear emergencies that meets all emergency planning needs and satisfies regulatory requirements.

#### 3.4.1 Alert

The emergency plan shall identify events which could lead to initiation of an alert. Initiating events may include:

- fire onsite that might affect radioactive material or systems important to safety

- severe natural phenomenon projected to occur that might affect radioactive material or systems important to safety (e.g., flood, tsunami, hurricane, tidal surge, hurricane force winds)
- severe natural phenomenon or other incidents have occurred that may have affected radioactive material or systems important to safety, but initial assessment is not complete (e.g., beyond design basis earthquake, flood, tsunami, hurricane, tidal surge, hurricane force winds, tornado missiles, explosion, release of flammable gas)
- elevated radiation levels or airborne contamination levels within the facility that indicate severe loss of control (factor of 100 over normal levels)
- ongoing security compromise (greater than 15 minutes)
- accidental release of radioactivity within building confinement barrier (pool or waste management facility)
- discovery of condition that creates a criticality hazard
- other conditions that warrant precautionary activation of the licensee's emergency response organization

The plan shall include a description of the applicant's emergency response organization mobilization, steps taken to mitigate consequences of the emergency, notification of offsite response organizations to respond to an onsite emergency (such as a fire, medical, police), and steps to be taken to escalate the classification, if necessary.

#### 3.4.2 Site Area Emergency

The emergency plan shall identify the events which could initiate an SAE. Events which may initiate an SAE include:

- fire onsite that involves radioactive material or compromises systems important to safety
- severe natural phenomenon that has actually compromised systems important to safety or the integrity of radioactive material (e.g., earthquake, flood, tsunami, hurricane force winds, tornado striking facility)
- other severe incident that has actually compromised systems important to safety or the integrity of radioactive material (e.g., aircraft crash into the facility, explosion)
- imminent or actual loss of physical control of the facility

- rupture of cask confinement barrier and release of radioactivity outside of outer confinement barrier

The plan should include a description of the applicant's emergency response organization mobilization, steps taken to mitigate consequences of the emergency, and procedures to notify offsite response organizations (fire, medical, police).

### 3.5 Detection of Accidents

The emergency plan shall describe the means of detecting each type of accident identified in the plan. Means of detecting accidents may include:

- visual observations
- radiation monitors
- smoke or heat detectors
- process alarms

The plan should also describe the means to notify the operating staff of any abnormal operating condition or of any other danger to safe operation (e.g., a severe weather warning)

### 3.6 Mitigation of Consequences

#### 3.6.1 Limiting Actions

The plan shall describe the means and equipment provided for limiting the consequences of each type of accident identified in the plan. The plan shall address the actions and systems in place to reduce the magnitude and/or reduce the effect of a radioactive or hazardous material release that has occurred. The plan should include actions to be taken to limit and mitigate the consequences to public and workers. Means for limiting releases could include:

- sprinkler systems and other fire suppression systems
- fire detection systems
- firefighting capabilities
- filtration or holdup systems
- use of water sprays on airborne releases of radioactive material
- automatic shut-off of process or ventilation flow

- use of fire-resistant building materials

Based upon the type of emergency, the plan should describe the criteria for the shutdown of systems or facility and the steps to be taken to ensure a safe, orderly shutdown and the approximate time required for a safe shutdown.

### 3.6.2 Onsite Protective Actions

The emergency plan should describe the nature of onsite protective actions, criteria for implementing those actions, the areas involved, and the procedures for notification to potentially affected persons. The plan should allow for timely relocation of onsite persons, effective use of protective equipment and supplies, and use of appropriate contamination control measures.

The plan should describe the means for controlling and/or minimizing radiological exposures for emergency response workers. The onsite exposure guidelines should be consistent with the EPA Manual of Protective Action Guides to be used in actions to control fires, stop releases, or protect the facilities. Exposure guidelines should be provided for:

- removing injured persons
- undertaking mitigating actions
- performing assessment actions
- providing onsite first aid
- performing personnel decontamination
- providing ambulance service or offsite medical treatment

The plan should include methods for onsite personnel evacuation and accountability. This could include:

- criteria for ordering an site evacuation
- means and timely notification of onsite persons impacted
- search and rescue
- locations of onsite and offsite assembly areas
- evacuation routes and means for transporting onsite personnel (e.g., privately owned vehicles, buses, company vehicles)

- monitoring of evacuees for contamination and control measures if contamination is found
- criteria for command center and assembly area evacuation and re-establishment at an alternate location
- means for evacuating and treating onsite injured personnel, including potentially contaminated personnel
- provisions for determining and maintaining accountability of assembled and evacuated personnel, and for identifying and determining the locations of personnel that were not evacuated

The emergency plan should describe provisions for preventing further spread of radioactive materials and for minimizing personnel exposures from radioactive materials. The plan should specify action levels for decontaminating personnel.

The emergency plan should describe provisions for determining the doses and dose commitments from external radiation exposure and internally deposited radioactive material received by emergency response personnel, including personnel from offsite emergency response organizations (fire, medical, police).

The emergency plan should describe arrangements made for hospital and medical services, both primary and backup, and their capabilities to evaluate and treat contaminated, injured persons, and injuries involving radiation, radioactive materials, and other hazardous materials used in conjunction with radioactive materials. The medical facility description should include capabilities to control any contamination that may be associated with the physical injuries. The emergency plan should specify how injured personnel who are potentially contaminated will be transported to offsite medical facilities. The plan should describe how chemicals or hazardous materials stored onsite may impact transporting injured personnel. The commitment to provide ambulance and hospital personnel with health physics support should be included.

### 3.6.3 Emergency Response Equipment and Facilities

The emergency plan should describe the onsite equipment and facilities designated for use during emergencies. The plan should describe the principle and alternate locations from which emergency control and assessment activities will occur. At least one location should be inhabitable during any emergency.

The plan should include the means for identifying which command center will be used in an emergency. The criteria for evacuating a command center and re-establishing control from an alternate location should be described. The plan should identify locations from which licensee

emergency workers would be dispatched to perform radiation surveys, damage assessment, emergency repair, or other mitigating tasks.

The protective equipment and supplies available to emergency response personnel should be described. Types of equipment and supplies may include:

- individual respiratory equipment, including self-contained breathing apparatus
- protective clothing
- fire fighting equipment and gear
- supplemental lighting
- medical supplies
- contamination control and decontamination equipment
- communications equipment
- radiation detection equipment, including radiation meters, air samplers, dosimeters
- hazardous material detection equipment
- potassium iodide

The plan should include criteria for issuing respiratory equipment, locations of emergency equipment and supplies, means for distributing these items, and criteria for dispensing potassium iodide (if required). The plan should also include inventory lists indicating the emergency equipment and supplies provided at specified locations.

The emergency plan should describe the primary and alternate onsite and offsite communication systems that would be used to transmit and receive information throughout the emergency. The planned frequency of operational tests should be stated. A backup means of offsite communication to commercial telephone should be provided for notification of emergencies and requests for assistance. Frequency of operability checks should be stated.

#### 3.6.4 Offsite Protective Actions

The emergency plan should describe the conditions that would require protective actions offsite and list the postulated accidents that could meet any of the conditions. Potential protective action recommendations (PAR) that would be made to offsite authorities should be discussed.

While licensee staff makes PAR recommendations to offsite authorities, the offsite organizations are responsible for deciding which PAR will be chosen. PARs should be consistent with the analysis results in NUREG-1140 and the guidance in the EPA Manual of Protective Action Guides.

### 3.7 Assessment of Releases

The emergency plan should discuss the actions to be taken to determine the extent of the problem and to decide what corrective actions may be required for each class of emergency. This should include the types and methods of onsite and offsite sampling and monitoring in case of a release of radioactive or other hazardous material. The provisions for projection of offsite radiation exposures should be described.

### 3.8 Responsibilities

The emergency plan should describe the emergency organization to be activated onsite for possible events, and offsite augmentation and support. The plan should delineate the authorities and responsibilities of key positions and groups, and identify the communication chain for notifying and mobilizing personnel during normal and non-working hours. Personnel with the responsibility for promptly notifying offsite response organizations and the NRC should be identified.

#### 3.8.1 Normal Facility Organization

The emergency plan should provide a brief description of the normal (day-to-day) facility organization and identify by position those with responsibility to declare an emergency and to initiate the appropriate response.

Personnel responsible for maintaining the emergency plan and emergency response procedures should be identified. The emergency plan should include provisions for an annual review and audit of the emergency preparedness program to ensure the program remains adequate. Elements of the audit should include a review of the following:

- emergency plan and associated procedures
- emergency response training activities
- records of emergency facilities, equipment, and supplies
- records associated with offsite response agencies interface (such as training and letters of agreement)
- exercises, drills, communications, and inventory checks
- activation of the emergency plan since the last audit

### 3.8.2 Onsite Emergency Response Organization

The emergency plan should identify the onsite emergency response organization for the facility, including during periods such as holidays, weekends, and extended periods when normal operations are not being conducted. Organizational charts and tables should be used when appropriate. If the organization is activated in phases, the plan should describe the basis organization and each additional component that may be activated to augment the organization. The plan should clearly state the minimum level of staffing needed to effectively implement the plan for each period or phase described.

### 3.8.3 Direction and Coordination

The emergency plan should designate the position of the person, and alternate(s), who has principal responsibility for implementing and directing the emergency response. This person's duties and authorities would include:

- control of the situation
- escalation or termination of the emergency condition
- coordination of the staff and offsite personnel who augment the staff
- communication with parties requesting information regarding the event
- request of support from offsite agencies

The plan should also describe this person's authority to delegate responsibilities and the individuals who may be delegated certain emergency responsibilities.

### 3.8.4 Onsite Staff Emergency Assignments

The emergency plan should specify the organizational group or groups assigned to the functional areas of emergency activity listed below. The plan should also describe strategies for staffing these positions if the emergency lasts longer than one working shift. The duties, authorities, and interface with other groups and offsite assistance should be described. The organizational groups should provide support in the following areas:

- facility systems operations
- fire control

- personnel evacuation and accountability
- search and rescue operations
- first aid
- communications
- radiological survey and assessment (both onsite and offsite)
- personnel and facility decontamination
- facility security and access control
- facility repair and damage control
- post-event assessment
- record keeping
- media contact
- criticality safety assessment

#### 3.8.5 Emergency Response Records

The emergency plan should describe the assignment of responsibility for reporting and recording incidents of abnormal operation, equipment failure, and accidents that led to a facility emergency. Decommissioning records should be maintained indefinitely. The emergency plan records to be maintained are:

- cause of the incident
- personnel and equipment involved
- extent of injury and damage (onsite and offsite) as a result of the incident
- locations of contamination with the final decontamination survey results
- corrective actions taken to terminate the emergency
- actions taken or planned to prevent a recurrence of the incident
- onsite and offsite assistance requested and received

- any program changes as a resulting from a critique of emergency response activities

The emergency plan should provide a description of the records associated with emergency planning that will be kept. These should include:

- training and retraining (including lesson plans and test questions)
- drills, exercises, and related critiques
- inventory and locations of emergency equipment and supplies
- maintenance, surveillance, calibration, and testing of emergency equipment and supplies
- letters of agreement with offsite support organizations
- reviews and updates of the emergency plan
- notification of onsite personnel and offsite response organizations affected by an update of the plan or its implementing procedures

#### 3.8.6 Responsibilities at Site of Government Agencies

The emergency plan should identify the principal State agency and other government (local, county, State, and Federal) agencies or organizations having authority for radiological or other hazardous material emergencies. The agency's and/or organization's location and specific response capabilities in terms of personnel and resources should be described.

### 3.9 Notification and Coordination

The emergency plan should describe the means used to activate the emergency response organization for each class of emergency during both regular and non-regular hours. The plan should describe the means provided to detect and notify the licensee's operating staff of any abnormal operating conditions or of any danger to safe operations (e.g., a severe weather warning). The means to promptly notify offsite response organizations and the NRC should be described. The ability to request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers, should also be described. The plan should include the commitment to notify the NRC response center immediately after notification of local authorities but no later than one hour after an emergency is declared.

### 3.10 Information to be Communicated

The emergency plan should describe the type of information to be communicated to offsite response organizations and the NRC. The information should be clear, concise and should avoid technical terms and jargon. The types of information to be communicated should include the status of the facility, if a release of radioactive material is occurring or could occur, and recommendations for protective actions that may be implemented by the offsite response organization responsible for implementing protective actions. A standard reporting checklist should be included in the plan to facilitate timely notification for each postulated accident.

### 3.11 Training

The emergency plan should include a description of the training provided to licensee staff on how to respond to an emergency. The plan should also include special instructions and orientations provided to offsite emergency response organizations. The plan should include a description of training requirements for each position in the emergency organization, frequency of retraining, estimated number of hours of initial training and retraining, and training of onsite personnel who are not members of the emergency response staff.

### 3.12 Safe Condition

The emergency plan should describe procedures for restoring the facility to a safe status after an accident and recovery plans. Recovery plans should include requirements for checking and restoring to normal operation all safety equipment important to safety. Requirements for returning emergency equipment and supplies used during an accident to a state of readiness should be described.

### 3.13 Exercises

The emergency plan should describe the provisions for periodic drills and exercises. Communications checks with offsite agencies and radiological/health physics, medical, and fire drills should be performed at the interval established by §72.32 (a) or §72.32(b).

The biennial onsite exercise should test the effectiveness of the personnel, plan, procedures, and readiness of facilities, equipment, supplies and instrumentation. Offsite responses organizations should be invited to participate, however, participation is not required. The plan should describe who has authority to develop the exercise accident scenario, requirements for non-participating

observers to evaluate the effectiveness of the exercise, the need for a critique of the exercise, and if deficiencies are found, how they will be corrected.

### 3.14 Hazardous Chemicals

The emergency plan should list all hazardous chemicals used at the site, typical quantities possessed, locations of use and storage, and the hazardous characteristics of material in sediment and holding tanks.

The emergency plan must certify compliance with Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, "Emergency Planning and Community Right-to-Know Act of 1986," with respect to any hazardous materials processed at the facility.

### 3.15 Comments on the Plan

The emergency plan shall contain requirements for obtaining comments from offsite response organizations on the initial plan before submittal to the NRC with the license application. Changes to the emergency plan should be communicated to the affected offsite response organizations. Letters of agreement with offsite response organization should be reviewed annually and renewed on a periodic basis. Letters of agreement may be included in the emergency plan or maintained separately.

### 3.16 Assistance

The emergency plan should describe provisions and arrangements for assistance from offsite response organizations during and after an emergency. The plan should indicate the location of local assistance with respect to the facility, if not previously stated. Exposure guidelines should be clearly communicated to offsite emergency response personnel. The plan should identify the services to be performed, means of communication and notification, and types of agreements that are in place for the following:

- medical treatment facilities
- first aid personnel and/or ambulance service
- fire fighters
- law enforcement assistance

The plan should describe the measures that will be taken to ensure that offsite response organizations maintain an awareness of their respective roles in an emergency and have the necessary equipment, supplies and periodic training to carry out their emergency response functions. Any provisions to suspend security or safeguards measures for site access during an emergency should be described.

The licensee should offer to meet at least annually with each offsite response organization to review items of mutual interest, including relevant changes to the emergency plan. The licensee should discuss the emergency action level

scheme, notification procedures, and overall response coordination process during these meetings.

## **4 REVIEW PROCEDURES**

The review includes evaluation of compliance with applicable regulatory requirements. Staff should review the license application safety analysis report (SAR) and other applicable documents since they contain information that may be relevant to the emergency plan.

### **4.1 Facility Description**

#### **4.1.1 Description of Facility and Site**

Staff should review the description of the facility and the site to ensure that site and adjacent area is adequately described. Maps submitted as part of the emergency plan should be reviewed to determine that the site, ISFSI or MRS cask storage areas, other onsite structures, and major site features are detailed.

#### **4.1.2 Description of Area Near Site**

Staff should review the plan to determine if the applicant has provided an adequate description of the principle characteristics of the area near the site. Maps provided should also be reviewed to ensure locations with emergency planning significance have been identified.

### **4.2 Types of Accidents**

Staff should review the emergency plan to determine if the types of radioactive material accidents have been adequately identified and described. Based on submittals from other licensees and other available information, staff should determine if all postulated accidents have been addressed.

### **4.3 Classification of Accidents**

Staff should review the emergency action levels at which an Alert or SAE will be declared. The staff should also review the procedures available to staff for classifying accidents.

#### **4.3.1 Alert**

Staff should review the emergency plan to determine if the definition Alert is consistent with NRC's definition if initiating events are realistic and comprehensive. The mobilization efforts at the Alert level should be reviewed to determine if there will be adequate protection of the workers. Determine if the steps taken to request assistance from an offsite response organization is appropriate.

#### 4.3.2 Site Area Emergency

Staff should review the emergency plan to determine if the definition of SAE is consistent with NRC's definition and if initiating events are realistic and comprehensive. Review the procedure for mobilization of the facility if an SAE is declared. Review the steps taken to notify offsite response organizations an SAE has been declared.

#### 4.4 Detection of Accidents

Staff should review the facilities means for detecting accidents. While at the facility, staff should determine the location of radiation monitors, smoke or heat detectors, process alarms, and criticality alarms. Staff should determine if licensee personnel understands they are to notify management if abnormal conditions are present.

#### 4.5 Mitigation of Consequences

##### 4.5.1 Limiting Actions

Staff should review the means and equipment provided to mitigate the consequences of accidents identified in the emergency plan. While at the facility, staff should determine if sprinkler systems, other fire suppression systems, fire detection systems, and filtration or holdup systems are available. Staff should review the criteria for safety shutting down the process or facility.

##### 4.5.2 Onsite Protective Actions

Staff should review the emergency plan to determine if it describes onsite protective actions to be taken, criteria for implementing the actions, and notification procedures for potentially affected personnel. Exposure guidelines should be reviewed to determine if the guidelines are consistent with the EPA Manual of Protective Action Guidelines. The evacuation and relocation procedures should be reviewed to determine if they are adequate. Arrangements with offsite medical facilities should be reviewed to determine if provisions to transport injured site personnel are adequate.

##### 4.5.3 Emergency Response Equipment and Facilities

Staff should review the emergency plan to ensure emergency response equipment and facilities are adequately described. The types of equipment necessary and the locations of the equipment should be specified. Provisions to inventory emergency response equipment should also be reviewed.

#### 4.5.4 Offsite Protective Actions

Staff should review the conditions that would require offsite protective actions. PARs should be reviewed to determine that they adequately evaluate the emergency situation.

#### 4.6 Assessment of Releases

Staff should review the emergency plan to determine how the licensee will assess radioactive releases to the environment. The description of the types of onsite and offsite sampling and monitoring equipment should be reviewed to determine adequacy. For an MRS the methods for projecting offsite radiation exposures should also be reviewed.

#### 4.7 Responsibilities

Staff should review the description of the onsite emergency organization to determine if it is adequate to properly assess the situation. Authorities and responsibilities of key positions and groups should be reviewed.

##### 4.7.1 Normal Facility Operation

Review the description of the normal operating facility organization. The positions with responsibility to declare an emergency and to initiate the appropriate response should be identified. Personnel with the responsibility for maintaining the emergency plan and implementing procedures should be identified.

##### 4.7.2 Onsite Emergency Response Organization

Staff should review the onsite emergency response organization to determine if there is sufficient staff to manage the emergency situation. Review the method of activating the emergency response organization. Determine if the minimum level of staffing is included in the plan.

##### 4.7.3 Direction and Coordination

Staff should review the plan to determine if the plan designates the position of the person, and alternates, who have the principle responsibility for implementing and directing the emergency response. Determine if there is authorization in the plan for delegating responsibilities.

##### 4.7.4 Onsite Emergency Assignments

Staff should ensure that the plan specifies which personnel and organizational groups are to provide support in the event of an emergency. Review the strategies for staffing the facility if the emergency is of long duration.

#### 4.7.5 Emergency Response Records

Review the procedure(s) that determine which records shall be retained and the length of retention. While at the site, review the records to ensure they are being maintained as stated in the plan.

#### 4.8 Notification and Coordination

Staff should review the means used to activate the emergency response organization for each class of accident. Ensure the licensee can communicate with licensee personnel during both regular and non-regular hours. Review the method the licensee has in place to notify local, State, and Federal authorities if an accident occurs.

#### 4.9 Information to be Communicated

Review the plan and implementing procedures to determine if the licensee has developed a clear, concise statement to be communicated to offsite response organizations and the NRC. Review the standard reporting checklist to determine if the licensee has notified all responsible agencies during an emergency.

#### 4.10 Training

Staff should review the emergency response training program to determine if licensee staff is adequately trained. Review the training records to ensure licensee personnel have taken the prescribed training.

#### 4.11 Safe Condition

Review the emergency plan for methods of restoring the facility to safe operation after an accident. Review recovery plans to determine if all equipment important to safety has been identified. Review the requirements for ensuring emergency response equipment is restored to a state of readiness.

#### 4.12 Exercises

Staff should review the provisions for conducting periodic drills and exercises. Review records to determine if drills have been completed in accordance with §72.32. Review documentation from the biennial emergency exercise.

#### 4.13 Hazardous Chemicals

Review the list of hazardous chemicals used at the site. Ensure the licensee certification of compliance with the Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, entitled, "Emergency Planning and Community Right-to-Know Act of 1986," with respect to any hazardous materials processed at the facility.

#### 4.14 Comments of the Plan

Review the emergency plan's requirements for obtaining comments from offsite response organizations. Staff should review comments received from the offsite organizations and the resolution of the comments.

#### 4.15 Offsite Assistance

Staff should review provisions for requesting assistance from offsite response agencies during and after an emergency. Review training provided to offsite emergency responders. If applicable, review meeting minutes from meetings with offsite responders.

### 5 EVALUATION FINDINGS

Evaluation findings are prepared by the reviewer upon determining that the applicant has satisfactorily met the regulatory requirements relating to emergency planning. If the documentation submitted with the application fully supports positive findings for each of the regulatory requirements, the statements of findings should be substantially as follows:

- FC.1 The SAR includes an acceptable description of the applicant's plans for coping with emergencies associated with the [ISFSI/MRS], in compliance with 10 CFR 72.24(k).
- FC.2 [If not covered by the exceptions identified at 10 CFR 72.32(a)] The application documentation includes an acceptable emergency plan for the [ISFSI/MRS] that complies with the requirements of 10 CFR 72.32, in compliance with 10 CFR 72.40(a)(11).

There may be technical specifications (license conditions) associated with the emergency planning or emergency plan. These may have been proposed by the applicant in compliance with 10 CFR 72.26 or may result from the review and evaluation of submittals relating to those areas.

The technical specifications relating emergency planning should be stated and justified at the respective SER section and are also to be included in the SER section on Technical Specifications under the appropriate category of license condition. The following illustrates samples of technical specifications associated with emergency planning and the emergency plan:

- LC.1 Limiting condition: Conduct of semi-annual communication checks with offsite response organizations; annual radiological/health physics, medical, and fire drills; and biennial onsite exercises to test response to simulated emergencies.
- LC.2 Limiting condition: Certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to Know Act of 1986, Title III, Public Law 99-499, with respect to hazardous materials at the facility.

LC.3 Surveillance: Operation of equipment/instrumentation to detect an accident-level condition ( e.g., seismometer, ambient temperature recording, radiation and criticality monitors). These devices may also be required to meet other regulatory requirements.

## **6 REFERENCES**

Environmental Protection Agency, "Manual of Protective Action Guides and Protective Action for Nuclear Incidents," EPA 400-R-92-001, May 1992

Emergency Planning and Community Right-to Know Act of 1986, Title III, Public Law 99-499

**(END)**