# EMERGENCY MANAGEMENT

## 8.1 PURPOSE OF REVIEW

The purpose of this review is to establish, with reasonable assurance, that the proposed facility will have adequate emergency management facilities and procedures in place to protect the public, the workers, and the environment during operations. Requirements for emergency management are provided in 10 CFR Part 70, as revised,[1] and address the need for an emergency plan in §70.22(i) and emergency capability as a baseline design criterion (BDC) in §70.64(a)(6), "Emergency capability." An emergency plan is required when an evaluation shows that the maximum dose to a member of the public offsite due to a release of radioactive materials would exceed 1 rem effective dose equivalent. BDC #6, "Emergency capability," is intended to ensure control of licensed material, evacuation of personnel, and availability of emergency facilities.

## 8.2 RESPONSIBILITY FOR REVIEW

Primary: Emergency Preparedness Specialist

Secondary: Licensing Project Manager
Health Physics Reviewer

Supporting: Regional Emergency Preparedness Inspector
ISA Reviewer
Site Representative

## 8.3 AREAS OF REVIEW

The review should address the applicant's submittal for an acceptable level of evidence of planning for emergency preparedness directed at situations involving real or potential radiological hazards. The review should address those design features, facilities, functions, and equipment that may affect some aspect of emergency planning or the capability of an applicant to cope with plant emergencies. In addition, the review should address coordination with offsite organizations. The staff should either review the emergency plan made in accordance with 10 CFR 70.22(i)(1)(ii) and with the guidance contained in the acceptance criteria below, or should review the applicant's evaluation that an emergency plan is not needed in accordance with 10 CFR 70.22(i)(1)(i).

The NRC staff reviewer should address the material presented, as described below.

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[1] Nuclear Regulatory Commission (U.S.), Washington, D.C. "Domestic Licensing of Special Nuclear Material (10 CFR Part 70)." *Federal Register:* Vol. 64, No. 146. pp. 41338--41357. July 30, 1999.

### 8.3.1 Evaluation That No Emergency Plan is Required

If the applicant submits an evaluation to demonstrate that an emergency plan is not required, the staff should review the evaluation against 10 CFR 70.22(i)(1)(i), and NUREG-1140, "A Regulatory Analysis of Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees." NUREG/CR-6410, "Nuclear Fuel Cycle Facility Accident Analysis Handbook," also contains useful information. Areas to be evaluated should include the following:

1. A description of the facility,
2. Types of materials used, including both radioactive material and hazardous chemicals,
3. Types of accidents,
4. Detection of accidents,
5. Site specific information used to support the evaluation, and
6. An evaluation of the consequences, both onsite and offsite, of accidents including radioactive and hazardous chemicals. The evaluation shows that the maximum dose to a member of the public offsite due to a release of radioactive materials would not exceed 1 rem effective dose equivalent or an intake of 2 milligrams of soluble uranium in accordance with 10 CFR 70.22(i)(1)(i).
7. The evaluation should address one or more of the factors provided in 10 CFR 70.22(i)(2).

### 8.3.2 Emergency Plan

If the applicant submits an emergency plan, the staff should evaluate the emergency management program against 10 CFR 70.22(i)(1)(ii) and Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities," which provides a standard format and content for an emergency plan. Elements in the emergency plan to be reviewed should include the following:

1. Facility description (including both onsite and offsite emergency facilities),
2. Types of accidents,
3. Classification of accidents,
4. Detection of accidents,
5. Mitigation of consequences (and safe shutdown),
6. Assessment of releases (both radioactive materials and hazards chemicals),
7. Responsibilities of licensee,
8. Notification and coordination,
9. Information to be communicated and parties to be contacted,
10. Training,
11. Safe shutdown (recovery and plant restoration),
12. Exercises (and drills),
13. Hazardous chemicals inventories and locations, and
14. Responsibilities for developing and maintaining the emergency program and its procedures.

## 8.4 ACCEPTANCE CRITERIA

### 8.4.1 Regulatory Requirements

The requirements for emergency management are provided in the following:

> Nuclear Regulatory Commission (U.S.), Washington, D.C. "Domestic Licensing of Special Nuclear Material (10 CFR Part 70)." *Federal Register:* Vol. 64, No. 146. pp. 41338--41357. July 30, 1999.

Specific citations are as follows:

1. § 70.22(i)(1)(i) specifies when an emergency plan does not have to be submitted to the NRC.

2. § 70.22(i)(3), contains the information that must be included in the emergency plan, if an emergency plan is required to be submitted.

3. § 70.64(6), "Emergency capability," specifies that the applicant or licensee must provide emergency capability to maintain control of licensed material, evacuation of personnel and emergency facilities.

### 8.4.2 Regulatory Guidance

Regulatory guidance for preparing an emergency plan includes:

1. Nuclear Regulatory Commission (U.S.) (NRC). Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities," NRC: Washington, D.C. January 1992.

2. -----. NUREG-1140, "A Regulatory Analysis of Emergency Preparedness for Fuel Cycle and Other Radioactive Materials." NRC: Washington, D.C. January 1988.

3. -----. NUREG/CR-6410, "Nuclear Fuel Cycle Facility Accident Analysis Handbook." NRC: Washington, D.C. March 1998.

### 8.4.3 Regulatory Acceptance Criteria

#### 8.4.3.1 Evaluation That No Emergency Plan Is Required

The adequacy of the evaluation that no emergency plan is required should be reviewed against the requirements in 10 CFR 70.22(i)(2) and the specific criteria given in the following sections of the SRP. This evaluation should be acceptable if the regulatory requirements and the following criteria are met:

##### 8.4.3.1.1 Facility Description

The evaluation includes a description of the facility and site, the area near the site, and the licensed activities conducted at the facility sufficient to support the evaluation. The description includes the following:

1. A detailed drawing of the site showing (1) onsite and near offsite (within 1 mile) structures with building numbers and labels, (2) roads and parking lots onsite and main roads near the site, (3) site boundaries, showing fences and gates, (4) major site features, (5) water bodies within approximately 1 mile, and (6) the location(s) of nearest residents.

2. The stack heights, typical stack flow rates, and the efficiencies of any emission control devices.

3. A general description of licensed and other major activities conducted at the facility, and the type, form, and quantities of radioactive and other hazardous material normally onsite.

#### 8.4.3.1.2 Types of Accidents

The evaluation describes each type of accident identified by the ISA that has the maximum offsite consequences exceeding the limit of 10 CFR 70.22(i)(1)(i). The description includes:

1. The process and physical location where it could occur,

2. Complicating factors and possible onsite and offsite consequences, including non-radioactive hazardous material released,

3. The accident sequence that has the potential for the greatest radiological and toxic chemical impact.

#### 8.4.3.1.3 Detection of Accidents

The evaluation described for each type of accident identified the following:

1. The means of detecting the accident,

2. The means of detecting any release of radioactive or other hazardous material,

3. The means of alerting the operating staff, and

4. The anticipated response of the operating staff.

#### 8.4.3.1.4 Evaluation of Maximum Public Exposure

In order to demonstrate that no emergency plan is required, an applicant may either

(1) request that its total possession limit for radioactive material be reduced below the emergency plan threshold in 10 CFR 70.22(i)(1), or (2) perform a site specific evaluation that demonstrates maximum public exposure is less than the limits in 70.22(i)(1)(i).

The evaluation should include a description of the following information sufficient to allow for independent verification:

1. Type of accident (e.g., fire, exposure, chemical release, nuclear criticality),
2. Location of accident,
3. Maximum source term,
4. Solubility of material,
5. Facility design or engineered safety features in the facility and the proposed release fraction,
6. Location and distance of nearest member of the public to the facility,
7. Dose model used and the process used to verify the reliability of the model and validity of the assumptions,
8. Assumed worst case weather condition, and
9. Maximum calculated dose to a member of the public at the facility boundary.
10. The applicant should provide a discussion of how facility activities have been coordinated with the Hanford Emergency Response Plan, DOE/RL-94-02.

The evaluation should include a list and a description of the factors in 10 CFR 70.22(i)(2) considered in evaluating maximum dose to members of the public. The applicant should demonstrate why the factors used in the evaluation are appropriate when compared to the factors in NUREG-1140. If the factors and evaluation show that the maximum dose to a member of the public offsite due to a release of radioactive materials could not exceed 1 rem effective dose equivalent or the intake of soluble uranium of 2 milligrams, no emergency plan is required in accordance with 10 CFR 70.22(i)(1)(i).

### 8.4.3.2 Emergency Plan

The adequacy of the proposed emergency plan should be reviewed against the requirements in 10 CFR 70.22(i)(3), and the specific criteria given in the following sections of the SRP. In general the plan should be consistent with the Hanford Emergency Response Plan (DOE/RL 94-02 or replacement, to ensure an integrated response and to eliminate duplication of effort within the planning community. The applicant's emergency plan should be acceptable if the regulatory requirements and the following criteria are met:

#### 8.4.3.2.1 Facility Description

##### 8.4.3.2.1.1 Operational Facilities

The emergency plan should include a description of the facility and site, the area near the site, and the licensed activities conducted at the facility sufficient to support emergency management activities. The description should include the following:

Emergency Management

1. A detailed drawing of the site showing:

    a. onsite and near offsite (within 1 mile) structures with building numbers and labels,
    b. roads and parking lots onsite and main roads near the site,
    c. site boundaries, showing fences and gates,
    d. major site features, and
    e. water bodies within approximately 1 mile.

2. A general area map (approximately 16.09 km [10-mile] radius), a United States Geological Survey topographical quadrangle (7 ½ minute series; including the adjacent quadrangle(s) if site is located less than 1.609 km (1 mile) from the edge of the quadrangle), and a map or aerial photograph indicating onsite structures and near-site structures (about 1.609 km [1-mile] radius). The map should include the location of sensitive facilities near the site such as hospitals, schools, nursing homes, nearest residents, fire department, prisons, and environmental sampling locations, and other structures and facilities important to emergency management.

3. The stack heights, typical stack flow rates, and the efficiencies of any emission control devices.

4. A general description of licensed and other major activities conducted at the facility, and the type, form, and quantities of radioactive and other hazardous materials normally onsite, by location (use and storage) and building, and hazardous characteristics (exposure rates, pH, temperature, and other characteristics) important to emergency management.

5. Certification that the applicant has met responsibilities under Emergency Planning and Right To Know Act of 1986, Title III, Public Law 99-499, in accordance with 10 CFR 70.22(i)(3)(xiii).

#### 8.4.3.2.2 Onsite and Offsite Emergency Facilities

The emergency plan should include a list and description of onsite and offsite facilities that could be relied upon in the event of an emergency. The description should include the following:

1. A list and description of both onsite and offsite emergency facilities by location and purpose of the facility.

2. A description of emergency monitoring equipment which is available for personnel and area monitoring, as well as that for assessing the release of radioactive or hazardous materials to the environment.

3. A description of the onsite and offsite services which support emergency response operations. The following are included:

a. decontamination facilities,
b. medical treatment facilities,
c. first aid personnel,
d. fire fighters,
e. law enforcement assistance, and
f. ambulance services.

4. In addition, the applicant should have emergency facilities, equipment, and resources, which are ready to support emergency response operations, including the following:

   a. Facilities of adequate size and appropriate location that are designated, equipped, and ready for emergency use,

   b. Adequate backup facilities required by the emergency plan and supporting documents that are available and ready for use,

   c. Appropriate equipment and supplies necessary to support emergency response activities that are accessible during accident conditions,

   d. Emergency equipment that is inventoried, tested, and serviced on a periodic basis to ensure accountability and reliability,

   e. Sufficient reliable primary and backup communications channels that are available to accommodate emergency needs,

   f. Offsite emergency resources and services that are identified, and are ready to ensure their timely mobilization and use,

   g. Operational engineering information, such as current as-built drawings and procedures, that are readily available in the emergency facilities,

   h. Sufficient equipment for personnel protection and monitoring, and

   i. Systems in place to alert onsite and offsite personnel in the event of an emergency.

   j. Specific discussion of coordination with Hanford Emergency Response Plan and use of shared or relied upon DOE emergency facilities and systems.

#### 8.4.3.2.3 Types of Accidents

The emergency plan should include a description for each accident identified by the ISA for which protective actions may be needed. The description should include:

1. The process and physical location(s) where the accidents could occur,

2. Complicating factors and possible onsite and offsite consequences, including nonradioactive hazardous material releases that could impact emergency response efforts,

3. The accident sequence that has the potential for the greatest radiological and toxic chemical impact, and

4. Figure(s) projecting dose and toxic substance concentration as a function of distance and time for various meteorological stability classes.

### 8.4.3.2.4 Classification of Accidents

1. The emergency plan classification system should include the following two classifications:

   - "Alert": Events that may occur, are in progress, or have occurred that could lead to a release of radioactive material or hazardous chemicals incident to the process, but the release is not expected to require a response by an offsite response organization to protect persons offsite[2].

   - "Site area emergency": Events that may occur, are in progress, or have occurred that could lead to a significant release of radioactive material or hazardous chemicals incident to the process that could require a response by offsite emergency response organizations to protect persons offsite.

2. For each accident in the emergency plan, the classification (alert or site area emergency) that is expected for each accident is identified.

3. The emergency plan should specify emergency action levels (EALs) at which an alert or site area emergency will be declared. EALs are specific conditions that require emergency response measures to be performed. The applicant's EALs are consistent with Appendix A of Regulatory Guide 3.67 and are compared with the Environmental Protection Agency's Protective Action Guides (EPA 400-R-92-001, May 1992 Revision). Transportation accidents more than 1 mile from the facility are not classified.

4. The emergency plan should designate the personnel positions and alternates with the responsibility for accident classification during normal and back shift hours.

5. The classification scheme needs to be coordinated with the encompassing Hanford Emergency Response Plan with differences in classifications noted and understood.

6. Dependent on results of the Hazards Analysis portion of the ISA, an additional emergency classification of general emergency may need to be incorporated into the license.

### 8.4.3.2.5 Detection of Accidents

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[2] For facilities located on DOE sites, offsite would start at the applicant's facility boundary and as a minimum be comprised of a portion of the DOE site.

The emergency plan should describe, for each type of accident identified, the following:

1. The means of detecting the accident,

2. The means of detecting any release of radioactive or other hazardous material,

3. The means of alerting the operating staff, and

4. The anticipated response of the operating staff.

#### 8.4.3.2.6 Mitigation of Consequences

1. The emergency plan should describe for each accident identified, adequate measures and equipment for safe shutdown and for mitigating the consequences to workers onsite and offsite as well as to the public offsite.

2. For impending danger from an accident initiator, the application should describe the following:

    a. The criteria that will be used to determine whether a single process or the entire facility will be shut down,

    b. The steps that will be taken to ensure a safe orderly shutdown of a single process or the entire facility,

    c. The approximate time required to accomplish a safe shutdown of processes, and

    d. The compensatory measures required for safety during the shutdown period following an accident.

#### 8.4.3.2.7 Assessment of Releases

1. The emergency plan should describe the applicant's procedures to be used to promptly and effectively assess the release of radioactive material or hazardous chemicals associated with the processing of radioactive material. The description includes:

    a. The procedures for estimating or measuring the release rate or source term,

    b. Valid computer codes used to project doses or concentrations to the public or environment and associated assumptions, along with adequate justifications to show the validity of the assumptions,

    c. The types, methods, frequencies, implementation time, and other details of onsite and offsite sampling and monitoring that will be performed to assess a release of radioactive material or hazardous chemicals, and

d. Method for assessing collateral damage to the facility, especially safety controls.

2. The emergency plan should describe the applicant's procedure for validating any code used to assess releases of radioactive material or hazardous chemicals.

### 8.4.3.2.8 Responsibilities

The emergency plan should describe the emergency response organization and administration which ensures effective planning, implementation, and control of emergency preparedness activities and meet the following criteria:

1. The organizational structure and chain of command are clearly defined,

2. Staffing and resources are sufficient to accomplish assigned tasks,

3. Responsibilities and authority for each management, supervisory, and professional position are clearly defined. Responsibility is assigned for the coordination of onsite and offsite radiation/hazardous material emergency response preparedness,

4. Interfaces with supporting groups, both onsite and offsite, are clearly defined,

5. Mutual cooperation agreements exist with local agencies such as fire, police, ambulance/rescue, and medical units, in addition to DOE and its implementation of its Site Emergency Plan,

6. Plant management controls include audit and assessment (SRP Section 11.7) of emergency preparedness to ensure site readiness to handle emergencies and to identify and correct problems,

7. The onsite emergency response organization as described provides reasonable assurance of effective command and control of the site during the assessment, mitigation, and recovery phase of an accident,

8. The emergency public information staff provides advance and ongoing information to the media and public on subjects that would be discussed during an emergency, such as radiation hazards, chemical hazards, site operation, and site emergency plans, and

9. The schedule of emergency preparedness procedure development provides for availability of procedures to support start-up and operation of new processes/facilities onsite.

### 8.4.3.2.9 Notification and Coordination

1. The emergency plan should provide reasonable assurance that emergency notification procedures will enable the emergency organization to correctly classify emergencies, notify emergency response personnel, and initiate or recommend appropriate actions in a timely manner, based on the following:

a. Classification of emergency events are based on the current emergency plan.

b. Notification procedures minimize distractions of shift operating personnel and include concise, preformatted messages. Appropriate follow-up messages to offsite authorities are issued in a timely manner.

c. Information on the nature and magnitude of the hazards are made available to appropriate emergency response personnel.

d. Radiological and chemical source term data are available to the command post, technical support center, emergency operation center, and appropriate State personnel, in cooperation with NRC.

e. When available, offsite field monitoring data are logged, compared with source term data, and used in the protective action recommendation process.

f. Protective Action Guides are available and used by appropriate personnel in a timely manner.

g. The emergency public information program ensures timely dissemination of accurate, reliable, and understandable information.

h. Systems are in place, if required, to alert, notify, and mobilize onsite and offsite response personnel in the event of an emergency.

i. Notification and coordination with responsible parties when some personnel, equipment, and facility components are not available.

2. The emergency plan should describe how and by whom the following actions will promptly and effectively be taken:

a. Decision to declare an alert or site area emergency,

b. Activation of onsite emergency response organization during all shifts,

c. Prompt notification of DOE in coordination with its Site Emergency Plan and offsite response authorities that an alert or site area emergency has been declared, including the licensee's initial recommendation for offsite protective actions (normally within 15 minutes),

d. Notification to the NRC Operations Center (as soon as possible and, in any case, no later than one hour after a declared emergency),

e. Decision on what onsite protective actions to initiate,

f. Decision on what offsite protective actions to recommend,

g. Decision to request support from offsite organizations, and

h. Decision to terminate the emergency or enter recovery mode.

#### 8.4.3.2.10 Information To Be Communicated

The emergency plan should describe the information to be communicated during an emergency including the following:

1. A standard reporting checklist to facilitate timely notification,

2. The types of information to be provided concerning facility status, radioactive or hazardous chemical releases, and protective action recommendations,

3. A description of preplanned protective action recommendations to be made to each appropriate offsite organization,

4. The offsite officials to be notified, as a function of the classification of the event,

5. The recommended actions to be implemented by offsite organizations for each accident treated in the emergency plan.

6. The information to be communicated should be coordinated with the prevailing Hanford Emergency Response Plan, to effectively communicate the necessary information.

#### 8.4.3.2.11 Training

The emergency plan should include an adequate training program for onsite and offsite emergency response personnel to ensure knowledge of the emergency plan, the Hanford Emergency Response Plan, assigned duties, and effectively respond to an actual emergency. The description includes:

1. The topics and general content of training programs used for training the onsite and offsite emergency response personnel to satisfy the objectives described above,

2. The administration of the training program, including responsibility for training, the positions to be trained, the schedules for training, the frequency of retraining, use of team training and the estimated number of hours of initial training and retraining,

3. The training to be provided on the use of protective equipment such as respirators, protective clothing, monitoring devices, and other equipment used in emergency response,

4. The training program for onsite personnel who are not members of the emergency response staff, and

5. The instructions and tours that will be provided to fire, police, medical, and other emergency personnel to the extent necessary commensurate with the results of the ISA.

#### 8.4.3.2.12 Safe Shutdown (recovery and plant restoration)

The emergency plan should describe the plans for adequately restoring the facility to a safe status after an accident and recovery after an emergency. The description should include:

1. Appropriate methods and responsibilities for assessing the damage to and the status of the facility's capabilities to safely control radioactive material or hazardous chemicals associated with the process,

2. Procedures for promptly determining the actions necessary to reduce any ongoing releases of radioactive or other hazardous chemicals and to prevent further incidents,

3. Provisions for promptly and effectively accomplishing required restoration action, and

4. Describing the key positions in the recovery organization.

#### 8.4.3.2.13 Exercises and Drills

The emergency plan should commit to conducting exercises and drills in a manner that demonstrates the capability of the organization to plan and perform an effective response to an emergency including effective coordination with DOE. An adequate plan should demonstrate the following:

1. Task-related knowledge is demonstrated through periodic participation by all qualified individuals for each position in the emergency response organization,

2. Drill performance is assessed against specific scenario objectives, using postulated accidents, that adequately test personnel, equipment, and resources, including previously identified weaknesses,

3. Effective player, controller, evaluator, and observer pre-drill briefings are conducted,

4. Scenario data and exercise messages provided by the controllers effectively maintain the time line and do not interfere with the emergency organization's response to exercise scenario events, except where safety considerations are involved,

5. Trained evaluators are used to identify and record participant performance, scenario strengths and deficiencies, and equipment problems,

6. Prestaging of equipment and personnel is minimized to realistically test the activation and staffing of emergency facilities,

7. Critiques are conducted in a timely manner and include a follow-up plan for correcting identified weaknesses and improving training effectiveness,

8. Emergency drills demonstrate that resources are effectively used to control the site, to mitigate further damage, and to control radiological/chemical releases, to perform required onsite activities under simulated radiation/airborne and other emergency conditions, to provide accurate assessments and status during an accident, and to initiate recovery,

9. Emergency drills demonstrate personnel protection measures, including controlling and minimizing hazards to individuals during events such as fires, medical emergencies, mitigation activities, search and rescue, and other similar events,

10. The emergency drill demonstrates that onsite communications effectively support emergency response activities,

11. The emergency drill demonstrates that the emergency public information organization disseminates accurate, reliable, timely, and understandable information,

12. Provisions are made for conducting quarterly communications checks with offsite response organizations, and

13. Offsite organizations are invited to participate in the biennial onsite exercise that tests the major elements of the emergency plan and response organizations.

#### 8.4.3.2.14 Responsibilities for Developing and Maintaining Current the Emergency Program and Its Procedures

The emergency plan should describe the responsibilities for developing and maintaining the emergency program and its procedures. The description should include:

1. The means for ensuring that the revisions to the emergency plan and the procedures which implement the emergency plan are adequately prepared, kept up to date normally (within 30 days of any changes), and distributed to all affected parties including the NRC, and

2. The provisions for approval of the implementing emergency procedures, making and distributing changes to the procedures, and ensuring that each person responsible for an emergency response function has immediate access to a current copy of emergency procedures. Provisions for approval of changes to the emergency plan and the procedures and those individuals authorized to make these changes are clearly stated.

3. Procedures for allowing offsite response organizations 60 days to comment on the emergency plan before submitting it to the NRC, and to provide NRC any comments received within 60 days along with the plan.

4. Procedures for modifying the emergency plan in accordance with 10 CFR 70.32(i).

5. Procedures to ensure coordination with DOE to ensure the maintenance of the emergency plan is in concert with the Hanford Emergency Response Plan.

## 8.5 REVIEW PROCEDURES

### 8.5.1 Acceptance Review

The primary reviewer should evaluate the application to determine whether it addresses the "Areas of Review" discussed in Section 8.3, above. If significant deficiencies are identified, the applicant should be requested to submit additional material before the start of the safety evaluation.

### 8.5.2 Safety Evaluation

After determining that the application is acceptable for review in accordance with Section 8.5.1, above, the primary reviewer should perform a safety evaluation against the acceptance criteria described in Section 8.4. If during the course of the safety evaluation, the primary reviewer determines the need for additional information, the primary reviewer should coordinate a request for additional information with the licensing project manager.

#### 8.5.2.1 Evaluation That No Emergency Plan Is Required

The primary reviewer should verify that the evaluation is consistent with the potential accident sequences described in the ISA. The ISA reviewer and the primary reviewer should coordinate to assure the resolution of any issues concerning the evaluation relative to ISA information. The final step for the primary reviewer should be to prepare a safety evaluation report (SER) in accordance with Section 8.6 which either agrees with the applicant's conclusion that no emergency plan is required or indicates that the staff does not accept the applicant's evaluation and recommends that an emergency plan be required by the applicant.

#### 8.5.2.2 Emergency Plan

After it is determined that an acceptable application containing an emergency plan has been received from the applicant, the primary reviewer should conduct a complete review and determine its acceptability in accordance with Section 8.4.3.2. The reviewer should verify that emergency planning is consistent with the potential accident sequences described in the ISA. The ISA reviewer and emergency plan reviewer should coordinate to assure the resolution of any issues concerning the emergency plan relative to ISA information.

Although the bulk of this information should be found in the Emergency Management program section of the licensee's submittal, the primary and secondary reviewers should gain familiarity with the site, including the emergency planning zones, demography, land use, plant design and layout, and major accidents postulated by the applicant presented in relevant sections of the SAR. The primary and secondary reviewers should also gain familiarity with proposed radiation protection activities and other operational matters that interface with emergency plans, particularly the programs reviewed against SRP Chapters 4 and 11. Draft and final environmental statements for the proposed facility should be consulted. In addition, for facilities that are located on DOE controlled sites, the respective DOE Emergency Plan should also be consulted. This information may be supplemented by a personal visit to the site by the reviewer

and meetings with the applicant. Consultation with FEMA with respect to the relevant state and local government emergency response capabilities may also be necessary.

The final step for the primary reviewer should be to prepare an SER in accordance with Section 8.6, “Evaluation Findings.”

## 8.6 EVALUATION FINDINGS

The primary reviewer writes an SER section addressing each topic reviewed under this SRP Chapter and explains why the NRC staff has reasonable assurance that the emergency management part of the application is acceptable. License conditions may be proposed to impose requirements where the application is deficient. The report includes a summary statement of what was evaluated and why the reviewer finds the submittal acceptable.

The staff can document the evaluation as follows:

> *The staff has evaluated .....* [Insert a summary statement of what was evaluated and why the reviewer finds the submittal acceptable.] *In accordance with 10 CFR 70.22(i), the licensee commits to maintaining and executing an emergency plan for responding to the radiological hazards resulting from a release of radioactive material and to any associated chemical process hazards. The NRC staff reviewed the emergency plan with respect to 10 CFR 70.22(i) and the acceptance criteria in section 8.4.3 of the SRP. NRC staff have determined that the applicant’s emergency plan is adequate to demonstrate compliance with 10 CFR 70.22(i), including: (1) the plant is properly configured to limit releases of radioactive materials in the event of an accident, (2) a capability exists for measuring and assessing the significance of accidental releases of radioactive materials, (3) appropriate emergency equipment and procedures are provided onsite to protect workers against radiation and other chemical hazards that might be encountered following an accident, (4) a notification system has been established for notifying Federal, State, and local government agencies and recommending appropriate protective actions to protect members of the public, and (5) necessary recovery actions are established for returning the plant to a safe condition following an accident.*

## 8.7 REFERENCES

Code of Federal Regulations, *Title 10, Energy*, Part 70, “Domestic Licensing of Special Nuclear Material."

1. Nuclear Regulatory Commission (U.S.), Washington, D.C. “Domestic Licensing of Special Nuclear Material (10 CFR Part 70)." *Federal Register* : Vol. 64, No. 146. pp. 41338–41357. July 30, 1999.

2. Nuclear Regulatory Commission (U.S.), Washington, D.C. “Part 30 Statements of Consideration and Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees.” *Federal Register* : Vol. 54, No. 66. pp 14051 - 14059. April 7, 1989.

3. Nuclear Regulatory Commission (U.S.) (NRC), Washington, D.C. NUREG/BR-0150, Vol. 1, Rev. 4, “RTM-96 Response Technical Manual.” NRC: Washington, D.C. May 1996.

4. -----. NUREG-0696, “Functional Criteria for Emergency Response Facilities.” NRC: Washington, D.C. February 1981.

5. -----. NRC/FCSS Policy and Guidance Directive FC 84-14, Rev. 1, “Radiological Contingency Planning Requirements and License Application Reviews.” NRC: Washington, D.C. October 1984.

6. Environmental Protection Agency (EPA) (U.S.). EPA 400-R-92-001, “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.” EPA: Washington, D.C. May 1992.