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## INSPECTION PROCEDURE 88050

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### EMERGENCY PREPAREDNESS

#### 88050-01 INSPECTION OBJECTIVES

The objectives of the Emergency Preparedness procedure are to determine whether:

01.01 The licensee's emergency preparedness program is:

- maintained in a state of operational readiness;
- properly coordinated with offsite support agencies; and
- audited in such depth to provide assurance that the emergency preparedness program is being properly maintained and implemented in accordance with requirements and commitments in the license or certificate.

01.02 The licensee implements a problem identification and resolution program that identifies and evaluates issues related to emergency preparedness and corrects items identified.

01.03 The licensee implements an event review program that evaluates applicability to their emergency preparedness program.

#### 88050-02 INSPECTION REQUIREMENTS AND INSPECTION GUIDANCE

NOTE: Title 10 of the *Code of Federal Regulations* (10 CFR) 40.31(j)(3), 10 CFR 70.22(i)(3), and 10 CFR 76.91 describes the basic elements of the emergency preparedness program. Regulatory Guide 3.67, revision 1, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facility," provides guidance acceptable to the U.S. Nuclear Regulatory Commission (NRC) staff on the information to be included in emergency plans. Some facilities are not required to have NRC approved emergency plans per 10 CFR 70.22(i), but will have an Emergency Procedure as part of their plant procedures. The specific requirements pertaining to how the licensee will address those required elements are contained in the NRC approved emergency plan, which is part of the license or certificate. Additionally, there are program requirements in the license application and associated procedures. Because this inspection procedure is to be applied to a variety of licensees, certain items listed below might not be applicable to a specific licensee.

02.01 Emergency Preparedness Program Review and Implementation.

a. Inspection Requirement.

Verify that the following elements of the licensee's emergency preparedness program are in compliance with emergency plan requirements, procedures, licensing commitments and NRC requirements:

1. Program Changes
2. Implementing Procedures
3. Training and Staffing
4. Offsite Support Agencies
5. Tests, Drills, and Exercises
6. Emergency Equipment and Facilities
7. Audits and Assessments

b. Inspection Guidance.

1. Program Changes

NOTE: The inspector must use professional judgment and consult with NRC regional and/or headquarters experts in determining whether changes could impact the effectiveness of the licensee's emergency plan. Changes that should be considered include those that involve the licensee's organizational structure, responsibilities, authorities, staffing levels, and key emergency personnel. Other items that could impact the effectiveness of the emergency plan include significant plant changes or modifications (such as the addition of a new process or technology, the addition of new hazardous materials, or changes in inventories of existing hazardous materials) and changes to the agreements with the offsite support agencies. Emergency plan updates should include management approved recommendations such as those coming out of the Nuclear Chemical Process Safety Program examination elements (such as Hazard Investigation and Assessment, Incident Investigation, and Audit and Inspections Programs) pertaining to emergency response. Guidance on the process for making emergency plan changes is provided in Regulatory Issue Summary (RIS) 2005-02.

Through discussions with licensee personnel, facility walk-downs, and records reviews:

- (a) Determine whether the licensee has established management controls to ensure that the emergency plan is maintained up to date. Those controls

should also establish guidance for identifying when prior NRC approval is required for proposed changes to the program.

- (b) Determine whether any changes made to the licensee's emergency preparedness program since the last inspection (Inspection Procedure [IP] 88050) meet emergency plan requirements, licensing commitments, and NRC requirements.
- (c) Verify that the licensee has not made any changes that could decrease the overall effectiveness of the emergency preparedness program without prior NRC approval, including any changes in the emergency preparedness organization that are applicable to position-specific requirements in the emergency plan for persons responsible for emergency management and response activities.
- (d) Determine whether changes to the emergency plan are reviewed, approved, and distributed in accordance with procedures and/or license or certificate commitments.
- (e) Determine whether any changes to the emergency preparedness program have been properly coordinated with the appropriate offsite support groups and agencies.
- (f) Determine whether the licensee has evaluated any significant facility additions and/or modifications for their impact on the emergency preparedness program, and if so, that the licensee has made the appropriate revisions to the emergency plan and implementing procedures.
- (g) Determine whether the licensee's emergency call list is current.
- (h) Review the current source term and analysis utilized by the licensee for the emergency plan to ensure that it is maintained and current. This source term is used to identify the consequences of various postulated events and operational upsets that would lead to a potential release of hazardous material and or a radiation exposure. Refer to Section 2.1 "Description of Postulated Accidents" of NRC Regulatory Guide 3.67, revision 1.

## 2. Implementing Procedures.

NOTE: A sample of procedures should be reviewed to determine whether the procedures are usable for the onsite staff. Procedure revisions should also be reviewed to determine whether changes did not result in a decrease in effectiveness to implement the emergency plan.

- (a) Review of a sample of changes since the last IP 88050 inspection to determine:
  - (1) Whether the implementing procedures have been reviewed and approved as specified in the emergency plan.

- (2) Whether any changes did not result in a decrease in the effectiveness of the emergency plan implementation.
- (b) Determine whether current copies of the implementing procedures are readily available to members of the emergency management and response organizations, and are maintained current in the appropriate field locations.
  - (c) Determine whether the procedures provide for the detection and proper classification of accidents, mitigation of the consequences of accidents, assessment of releases, protective actions recommendations, personnel accountability, notification and coordination, and authority for initiating evacuation alarms and safe shutdown. Determine whether procedures also include guidance for site recovery/reentry, and restoring the facility to a safe condition after an accident involving either radioactive or other hazardous materials. This should include whether the criticality accident alarm system can and will be silenced at an external plant area before reentry and that a control center is available for personnel accountability and reentry. If any shutdown procedure is necessary, determine whether the procedure is in place and can be performed from an appropriate location.
  - (d) Determine by interviewing key licensee management whether they are aware of procedure changes. The inspectors should use these interviews to determine whether the licensee's emergency staff is familiar with procedure changes and that the procedures are user-friendly. This is not intended to be a test of memory, but should be a verification of the change processes for the emergency plan implementing procedures.
  - (e) Determine whether nuclear criticality safety (NCS) precautions for firefighting are included in the emergency procedures. Determine whether for areas in which firefighting restrictions exist because of NCS concerns, appropriate postings are in place that clearly and concisely portray such restrictions.
  - (f) Determine whether the pre-fire plan(s) are current, available in the appropriate field locations, and reflect any special considerations such as unique chemical hazards or areas where water must be excluded for firefighting due to NCS concerns. This should not entail an in-depth review of the pre-fire plans, as that is covered in a separate inspection per IP 88055, Fire Protection. In the inspection planning process, the inspectors should review the last IP 88055 inspection report to preclude duplication of effort.
  - (g) Through discussions with licensee staff and review a sample of records, review the licensee's emergency response program to determine whether, for plant changes, all elements identified in the regulations and regulatory guides (10 CFR 40.31[j][3], 10 CFR 70.22[i][3], 10 CFR 76.91, and Regulatory Guide 3.67), pertaining to chemical and/or other hazards that have the potential to affect operations with special nuclear material at the

facility, are adequately addressed. The inspector should determine whether all conditions identified in the license/certificate and the site emergency plan pertaining to chemical hazards are actually implemented in such changes.

- (h) Determine whether the licensee has a process for evaluating plant changes and modifications for their potential impact on the current emergency preparedness program if implemented. This process may be a routine change review process that incorporates a cross-discipline evaluation.

Information for Response Groups: Organizations, both onsite and offsite, which are expected to provide assistance during emergencies, should be informed of conditions that might be encountered and should be assisted in preparing suitable emergency response procedures. For example, the on- and offsite emergency response personnel, including fire response personnel, should be provided with guidance on fighting fires in fuel handling areas.

Controlled Evacuation of Personnel: Emergency procedures should clearly designate evacuation routes. These routes should follow the quickest and most direct routes practicable. The routes should be clearly identified and should avoid recognized areas of higher risk. The routes should lead personnel to pre-established assembly areas or rally points for accounting.

These evacuation procedures should be made known to all employees in areas which could be affected by radiation from a nuclear criticality. The procedures should also make provision for the evacuation of transient personnel. The emergency procedures should provide instructions on what actions, such as emergency shutdowns, should be performed prior to evacuation.

Controlled Reentry: Reentry should be controlled by written procedures and equipment, such as radios and radiation detection devices and should be available for the reentry team. Field survey instrumentation used for reentry should be capable of providing adequate warning of the recurrence of a criticality excursion. In order to facilitate emergency response, provisions should be made to silence the criticality alarms at an external plant area. Written procedures should require that the alarms be silenced before reentry.

The NCS program should require that reentry and recovery from a limit violation be governed by corrective procedures that ensure the remaining safety margin is acceptable, or not further reduced if already unacceptable. The NCS function should review all recovery procedures.

### 3. Training and Staffing.

NOTE: The inspector should conduct interviews with key decision-makers and other appropriate individuals to discuss the emergency training that they receive. Key decision-makers with responsibility for event classification should be presented hypothetical accident scenarios to demonstrate familiarity with procedures and the

effectiveness of procedural guidance in making event classification, notification, and protective action recommendations. The notification, callout and evacuation procedures should also be discussed to ensure the effectiveness of that training. The purpose of the interview is to verify that he/she received the proper training and knows what procedures should be implemented in response to certain conditions.

In reviewing the training provided to offsite responders, the inspector should determine whether the licensee has in place a method to ensure that the training frequency is maintained and that the training content is revised, as appropriate, to reflect changes to the plant and onsite hazards. Particular attention should be paid to new processes, buildings, and hazardous chemicals, including their location and inventory. Unique problems, such as water exclusion areas for criticality control, should be clearly identified to offsite responders beforehand.

- (a) By discussions with licensee personnel on their various responses to hypothetical emergency situations, and also by records reviews, determine whether the licensee has provided training that is effective and consistent with the frequency and performance objectives outlined in the emergency plan. For those individuals who cannot readily or correctly describe their responses to hypothetical emergency response situations, review the associated training records to determine whether those individuals' training is current and if the quality or frequency of their training is adequate.
- (b) The inspectors should interview several members of the emergency staff responsible for implementing the procedures during an emergency, for example, the Emergency Director, an operations manager, a shift firefighter, and a radiation protection technician. The inspectors should use these interviews to determine whether the licensee's emergency staff are familiar with the procedures that they would use and implement during an actual emergency.
- (c) Through document reviews and discussions with onsite personnel, determine whether training was provided that covered site-specific emergency procedures and guidance. Determine whether the training covered the responsibilities of onsite personnel in the event of those accident scenarios postulated as the most probable for the specific site occurring. The focus should be on the general plant population.
- (d) Determine whether the training covers, as appropriate, the use of any special emergency equipment such as communication devices, respirators or self-contained breathing air packs, chemical-resistant suits, monitoring devices for radioactive or other hazardous materials, etc. Determine whether personnel required to use such equipment have been properly qualified.
- (e) Review the training that the licensee provides to offsite responders, including fire, police, medical, and other emergency personnel. Determine whether training includes any special instructions and orientation tours.

Site-specific and special hazards should be covered, including the location and nature of radioactive and/or hazardous materials and moderator exclusion areas where water is prohibited for fire fighting. Periodic refresher training should be offered.

- (f) Determine whether the licensee has established and implemented provisions to ensure appropriate staffing levels of trained emergency personnel for all shifts.

#### 4. Offsite Support Agencies.

NOTE: Inspector contact with selected agencies should be established. Additionally, follow-up contact should be made in the event that the primary contact for the support agency changes, agency responsibilities change, or if serious deficiencies are found involving how the agency interprets its responsibilities. In the event of deficiencies, the licensee should be informed so that it can take appropriate action to clarify the situation. Such agencies are not licensees and should only be encouraged (if previously asked by the licensee) to take part in drills. Additionally, follow up contact is beneficial on a periodic basis to verify that the support agency has possession of any assigned materials from the site (e.g., Emergency Plan, Pre-fire Plan, etc.) and to verify that non-emergency communication with the site is available (e.g., discussions regarding exercise/drill feedback, changes to the emergency plan, etc.).

- (a) Determine whether written agreements have been made with each agency specified in the emergency plan and that those agreements have been updated and renewed at the required frequency.
- (b) Determine by random selection whether, the agencies for which agreements are in effect are periodically contacted by the licensee for training and taking part in drills or otherwise reviewing the plans in the agreements so that the agencies are familiar with their respective roles in emergency responses.
- (c) Contact, by random selection, certain offsite agencies such as the local hospital(s), fire department(s), and the State radiological health agency, to determine their understanding of their respective written agreements with the licensee. If it is found that the agencies do not fully understand what is expected of them, bring any deficiencies to the licensee's attention for action.
- (d) Determine whether the licensee has maintained its certification of compliance with the Emergency Planning and Community Right-To-Know Act of 1986.
  - (1) Some licensees are required to comply with the EPA SARA (Superfund Amendment and Special Reauthorization Act) Title III regulations, also known as the "Emergency Planning and

Community Right-To-Know Act" (the Act) of 1986, which specifies action in: (1) emergency response planning, (2) emergency response reporting, (3) hazardous chemical inventory reporting, and (4) toxic chemical release reporting.

- (2) Review the "Hazardous Chemicals" section of the emergency response plan to determine what requirements apply to the licensee and determine how the licensee certifies compliance with the Act. Determine whether the licensee reviews major facility and process changes (i.e., addition of new processes or significant changes in process technology and chemistry) to ensure that it remains in compliance with the Act.

5. Tests, Drills and Exercises.

Note: The licensee's biennial exercise is reviewed during the evaluation of exercises and drills in inspection procedure (88051); therefore, those exercises should not be the focus in this procedure. The inspector should focus on reviewing the non-NRC evaluated drills and exercises conducted by the licensee on a defined frequency for training purposes as outlined in the emergency plan and procedures. Deficiencies identified during exercise critiques must be corrected.

- (a) Determine whether a program is in place to ensure the exercise objectives and scenario details are kept confidential from participants. An effective drill and exercise program requires three critical elements:
  - (1) A credible, technically correct, and challenging scenario to test key elements of the emergency plan, procedures, equipment, and the onsite and offsite response organizations;
  - (2) Adequate facilities and resources; and
  - (3) Critical and candid assessment of the response using trained controllers and evaluators. This assessment may be a part of the licensee's drill/exercise critique process.
- (b) Verify that drills and exercises are conducted within the timeframe required by the emergency plan and procedures. Ensure that the licensee is conducting a criticality and accountability drill as required by their emergency plan, procedures, and/or license conditions.
- (c) Determine whether the licensee conducts quarterly communications checks with offsite response organizations, to check and update all necessary telephone numbers.
- (d) Determine if the licensee has provisions for updating the emergency plan based on the incorporation of management-approved recommendations from drills and actual events.

- (e) Review drill packages and records maintained by the licensee to verify that items identified during critiques are being captured in the corrective actions program.

6. Emergency Equipment and Facilities.

NOTE: It is not intended that all equipment or evacuation points be examined - only a random selection based on the inspector's professional judgment and the licensee's past performance. Only one offsite sampling area and one criticality badge station need be observed. If problems are identified, the licensee should take appropriate action to ensure that the remaining stations are unaffected. Inspectors should request that the licensee conduct random functional/operational tests while conducting walk-downs of the emergency equipment and facilities during the inspection (i.e., radios, flashlight, radiation detection equipment, telephones, computer systems, badge readers, bullhorn, calibration and expiration dates, etc.).

- (a) Selectively examine the emergency equipment and kits specified in the emergency plan, including any onsite medical facilities. Determine whether they are checked and serviced at the required frequencies. Determine whether proper inventory levels are maintained and periodically checked. Verify that the equipment is operable and maintained in good condition. In the event emergency kits are provided to local hospitals for use in responding to injured, contaminated workers, determine whether the contents of the kits are properly maintained. Verify that the kits contain appropriate quantity and number of dosimetry and survey instruments, which is operational and within calibration.
- (b) Examine onsite and offsite rendezvous facilities or areas where personnel must go for a given severity-level accident (e.g., "Alert," "Site Area Emergency") and determine whether the areas are readily accessible and contain operable and adequate communications and other gear as specified in the emergency plan.
- (c) The emergency plan should describe the types of sampling or other actions to be taken during an emergency involving extensive effluent releases and accidental criticality. Offsite effluent sampling and retrieval of TLDs and film badges should also be specified. Physically examine a sample of the offsite equipment to determine whether it meets the specifications in the emergency plan. Determine whether the equipment is operable and properly maintained.

7. Audits and Assessments.

- (a) Verify that the licensee has conducted audits or self-assessments in the area of emergency preparedness and is in compliance with license or certificate requirements.

- (b) Review and discuss the auditors' qualifications in the area of emergency preparedness. The auditor should not have direct responsibility for the emergency preparedness program. Determine if the scope and depth of the audit was comprehensive enough to characterize the program state of readiness. The audit should assess the state of readiness of the emergency preparedness equipment, organization, and facilities. Verify the audit periodically include observation of drills and exercises.
- (c) Determine whether audit findings and recommendations are provided to plant management.
- (d) Select internal or contracted audits performed since the previous inspection, and examine the records documenting selected audits to determine whether there was a written plan for the audit, the audit adequately reviewed the audited area, appropriate corrective actions were taken whenever deficiencies were found, and whether there was a check of the effectiveness of the immediate corrective action.
- (e) Determine by interviewing the licensee representatives, how the licensee assures the effectiveness of audits, such as by use of contractor audits, use of a secondary (or follow-up) audit system on a periodic basis, conducted by a member of management or a senior technician not directly responsible for the system audited.
- (f) Determine whether a system is in place for adequately tracking and resolving audit findings and that this system is being properly used.

#### 02.02 Identification and Resolution of Problems.

##### a. Inspection Requirements.

Determine whether the licensee is identifying issues in the area of emergency preparedness at an appropriate threshold and entering them into the corrective action program, as required by license or certificate requirements. Verify that the licensee is appropriately addressing and correcting safety-significant condition reports.

##### b. Inspection Guidance.

Perform a screening review of items entered into the corrective action program. Identify safety-significant or repetitive failures related to emergency preparedness. In addition, be alert to conditions, such as repetitive equipment failures, failure to include emergency preparedness staff in plant changes or modification reviews, or human performance issues such as training that might indicate a trend or warrant additional follow-up.

Use direct observation of operations, discussions with relevant plant staff, and a sample review of applicable documentation to:

1. Determine whether corrective actions commensurate with the significance of the issue have been identified and implemented by the licensee. Review a sample of issues to determine whether the licensee has appropriately classified the issue.
2. Determine whether equipment, human performance, and program issues are being identified by the licensee at an appropriate threshold and are being entered into the problem identification and resolution program.
3. Consider licensee identified issues (e.g., issues identified during audits or self-assessments) and issues identified through an employee concerns program, if applicable.
4. Review a sample of safety-significant issues that involved emergency preparedness, if available, to determine whether the licensee has taken appropriate short- and long-term corrective actions. At a minimum, drills and exercises, including biennial exercise; unusual incidents, and emergency activations are often a source of condition reports

#### 02.03 Event Review.

##### a. Inspection Requirements.

Determine whether the licensee has implemented a program of reviews that evaluates safety-significant events applicability to the emergency preparedness program.

##### b. Inspection Guidance.

1. Determine whether there have been past operational events that required implementation of the site emergency plan. If so, determine whether there were any problems or deficiencies associated with the emergency plan. Any deficiencies must be corrected.
2. Review the events occurring since the last inspection to determine compliance with the emergency plan and procedure, license or certificate including, as appropriate:
  - (a) Whether the event should have resulted in entrance into the emergency plan and or activation of the emergency response organization.
  - (b) The prompt review and evaluation of non-routine events and unusual occurrences that required emergency preparedness.
  - (c) Assessing the significance of non-routine events and unusual occurrences, and reporting them, both internally, and to the NRC.
  - (d) Evaluation of extent of condition of findings related to emergency preparedness (i.e. training groups/individuals, specific procedures, etc.).

- (e) Assuring completion of corrective actions related to non-routine events and unusual occurrences related to emergency preparedness.

#### 88050-03 RESOURCE ESTIMATE

An inspection performed using this inspection procedure is estimated to require 32 hours of direct onsite inspection effort annually.

#### 88050-04 REFERENCES

10 CFR 70.22(l)(3), Emergency planning for Part 70 licensees.

10 CFR 40.31(j)(1) and (3), Emergency planning for Part 40 licensees.

10 CFR 70.22(g)(l), Footnote Reference - Section IV, "Content of Emergency Plans," Appendix E, 10 CFR 50.

10 CFR 76.91, Emergency Planning for Gaseous Diffusion Plants.

RIS-05-002, "NRC Regulatory Issues Summary 2005-02, Revision 1: Clarifying the Process for Making Emergency Plan Changes", Rev. 1, April 2011.

Reg. Guide 3.16, "General Fire Protection Guide for Plutonium Processing and Fuel Fabrication Plants," January 1974.

Reg. Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facility," Rev. 1, April 2011.

Reg. Guide 8.5, "Criticality and Other Interior Evacuation Signals," Rev. 1, March 1981.

NUREG-1140, "A Regulatory Analysis of Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees," reprinted 1987.

NUREG-1320, "Nuclear Fuel Cycle Accident Analysis Handbook," 1988.

NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility".

ANSI/AN-8.3-1986, "Criticality Accident Alarm System".

NRC Information Notice No. 89-46, "Confidentiality of Exercise Scenarios".

NRC Memorandum from R. M. Bernero and E. L. Jordan to J. M. Taylor, "Lessons Learned Review of the Sequoyah Fuels Corporation Event of November 17, 1992," dated October 27, 1994.

OSHA, *Process Safety Management of Highly Hazardous Chemicals*, 29 CFR 1910.119 (n), "Emergency Planning and Response".

EPA, *Risk Management Programs for Chemical Accident Release Prevention*, 40 CFR Part 68, Section 68.45, "Emergency Response Program".

Chemical Manufacturers Association, *Responsible Care<sup>7</sup>, Process Safety Code of Management Practices*, Washington, 1990.

Nuclear Regulatory Commission, *Inspection Procedure 88050*, "Emergency Preparedness," Latest Revision.

Center for Chemical Process Safety, *Guidelines for Vapor Release Mitigation*, American Institute of Chemical Engineers, 1988.

Center for Chemical Process Safety, *Guidelines for the Safe Storage and Handling of High Toxic Hazard Materials*, American Institute of Chemical Engineers, 1988.

NRC Letter from E.J. McAlpine to Region II licensees, Submittal of Exercise Objectives and Scenario Details, dated November 20, 1996.

NRC Policy and Guidance Directive FC 84-14, Standard Review Plan for Emergency Plans for Fuel Cycle and Material Licensee's, Rev. 1, March 1994.

#### 88050-05      PROCEDURE COMPLETION

Implementation of each applicable inspection requirement will constitute completion of this procedure. Individual inspection samples and breadth of review will be determined by the inspector based on requirement compliance, risk- significance of activity, and extent of the activity or records available.

END

Attachment:

Revision History for IP 88050

Attachment 1- Revision History for IP 88050

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution Accession Number
	09/05/06 CN 06-020	IP 88050 has been revised to reduce duplication and improve effectiveness and efficiency by incorporating and consolidating inspection requirements involving emergency preparedness and removing inspection requirements for evaluation of exercises and drills.	N/A	ML06179025 7
N/A	ML13233A182 03/06/14 CN 14-007	This document has been significantly revised to: (1) emphasize the risk-informed, performance-based approach to inspection, (2) reorganize the procedure to make more efficient during inspection planning and execution , and (3) remove completed or obsolete IPs and incorporate other fuel cycle IPs into a central location.	N/A	ML13347A96 5