
INSPECTION PROCEDURE 89050

EMERGENCY PREPAREDNESS AND FIRE PROTECTION AT URANIUM RECOVERY AND 11e.(2) BYPRODUCT MATERIAL FACILITIES

PROGRAM APPLICABILITY: 2602 and 2801

89050-01 INSPECTION OBJECTIVES

1.1 To establish the inspection program for emergency preparedness and fire protection programs at conventional uranium mills, in situ recovery uranium mills, 11e.(2) byproduct material disposal sites, and other 11e.(2) byproduct material sites licensed and regulated under Title 10 to the *Code of Federal Regulations* (10 CFR) Part 40.

1.2 To determine if the emergency preparedness and fire protection programs are being maintained in a state of operational readiness.

1.3 To determine if the emergency preparedness and fire protection programs comply with U.S. Nuclear Regulatory Commission (NRC) license and regulatory requirements.

89050-02 INSPECTION REQUIREMENTS

This Inspection Procedure (IP) provides the requirements and guidance for inspections of emergency preparedness and fire protection programs at sites licensed under 10 CFR Part 40. Because this IP applies to a variety of licensees, some of the inspection requirements and guidance provided in this IP may not be applicable to all sites.

02.01 Inspection Requirements to Meet Objectives. To meet the objectives of this IP, the inspector shall conduct the following minimum inspection activities:

- a. To the extent possible, the inspector shall prepare for the inspection in the office before the onsite inspection. This effort should include review of the site's performance-based license and license application for the emergency preparedness and fire protection program requirements. If the inspection is an announced inspection, the inspector should consider requesting electronic copies of the licensee's manuals or procedures prior to arrival onsite. The inspector should also determine if any significant changes have been made to these programs since the last inspection.
- b. Conduct one or more site tours to verify that critical equipment and emergency response supplies are maintained in a state of readiness to mitigate, prevent, or recover from accidents and other unplanned events.
- c. If possible, observe one or more critical activities, such as routine inventories of supplies, routine operational walkdowns, training sessions, emergency response drills, or similar activities to ensure that site staff are prepared for accidents and events.

- d. Review any incident or accident that has occurred since the last inspection to ensure that the licensee responded to the event in accordance with commitments made in the license and site procedures. Ensure the licensee reported the incident to the NRC as required by the license. Ensure that the licensee reviewed the event and made changes to its programs based on lessons learned from the event.
- e. Verify, through a limited records review, that the licensee continues to maintain emergency preparedness and fire protection programs in accordance with license and procedural requirements. Ensure that emergency call lists and agreements with local law enforcement agencies and hospitals are up-to-date and the licensee provides training for responses to emergencies.
- f. If there have been significant changes in the programs since the last inspection, ensure that the changes have been appropriately evaluated and implemented by the licensee.

02.02 Performance-based/Risk-informed Inspections. In accordance with Commission policy (SECY-98-144), inspectors must conduct performance-based inspections with an emphasis on risk-significant activities that have an impact on safety and the environment. A performance-based inspection emphasizes the observation of activities and results of the licensees' programs over the review of procedures or records. The risk-informed inspection approach considers risk insights together with other factors to focus inspection activities commensurate with the risks associated with the implementation of the licensee's NRC-approved programs.

The higher risk activities that impact the emergency preparedness and fire protection programs include:

- Hazardous chemicals (NRC-regulated if mixed with radioactive material)
- Spills and other radiological emergencies
- Yellowcake dryer accidents
- Tailings impoundment dam and retention pond berm failures
- Transportation incidents
- Inadequate procedures and training for the risks listed above

The inspector should selectively review the licensee's emergency response and fire protection programs based on the highest consequence risks present at the time of the inspection. The license application may provide additional details and analysis of the potential risks and associated event consequences that may be present at that site. The inspector will verify compliance primarily through observations of site conditions, observations of work activities, interviews with workers, demonstrations by workers, and reviews of critical records. The inspector shall focus attention on the most important, risk-significant activities and the results of the licensee's efforts

89050-03 INSPECTION GUIDANCE

The emphasis of this inspection effort is to ensure that the licensee has established and implemented critical programs, manuals, and procedures to mitigate the consequences of unplanned accidents and events. The inspection should include direct observations of activities

as much as possible but may include program reviews as needed. This section includes guidance for review of the following program areas:

- Regulatory requirements applicable to emergency preparedness and fire protection programs
- Implementing procedures
- Program changes
- Staffing and training including tests, drills, and exercises
- Emergency equipment and facilities
- Offsite support agencies
- Fire protection
- Audits and assessments
- Reporting of events

03.01 Regulatory Requirements. Title 10 CFR 40.32(c) states, in part, that an application for a specific license will be approved if the applicant's proposed equipment, facilities, and procedures are adequate to protect health and minimize danger to life or property. For uranium recovery and 11e.(2) byproduct material sites, these proposed equipment, facilities, and procedures include those needed to mitigate various types of accidents including releases, spills, injuries, fires, transportation incidents, and weather-related events. Details of the licensee's commitments are commonly provided in the license, license application, and tie-down letters. The details for emergency preparedness and fire protection programs are established and implemented in site manuals and procedures.

03.02 Implementing Procedures. As appropriate for the type of facility, site procedures should include:

- a. Accident detection and classification
- b. Mitigation of consequences (i.e., instructions for terminating a spill or release)
- c. Radiological assessment of releases and spills
- d. Response to impoundment dam failure
- e. Notification and coordination with offsite agencies
- f. Offsite agency authority to enter radiologically restricted areas
- g. Authority to initiate plant shutdowns and evacuations
- h. Personnel evacuation and accountability
- i. Recovery, re-entry, and restoration of the facility or area

The licensee's response to an emergency may be impacted by the quality and completeness of the licensee's procedures. The inspector should walk down a representative sample of procedures to determine if the procedures are usable by site staff. For example, if the procedure references the use of a specific component, is that component available and ready for use? The inspector should confirm if current copies of the implementing procedures are readily available to the licensee's staff and are maintained in the appropriate field locations. The inspector should interview key licensee staff to determine if the staff are familiar with the procedures and their roles during emergency situations.

03.03 Program Changes. The inspector should determine whether recent changes to staffing, facilities, or procedures could impact the effectiveness of the licensee's emergency preparedness and fire protection programs. In particular, the inspector should determine if the changes decreased the effectiveness of the licensee's ability to respond to emergencies.

The possible changes that may impact the effectiveness of the programs include changes to the licensee's organizational structure, staff responsibilities and authorities, and existing agreements with offsite support agencies. Other changes that could impact the effectiveness of the emergency response program include modifications of facilities and equipment, addition of new processes or technologies, addition of new hazardous or radioactive materials, or changes in inventories of existing hazardous and radioactive materials.

The inspector should compare the changes to license requirements and commitments to ensure that the licensee has not deviated from the original licensing basis. The inspector should also ensure that the licensee has notified offsite support agencies of the changes, if the changes impact those agencies.

03.04 Staffing and Training. The requirements for training and frequency of training depend on license requirements and site procedures. Training may include mock injuries, fire drills, or site evacuation exercises. Alternatively, the licensee may simply provide limited emergency response training as part of its annual radiation safety training. The inspector should review the licensee's training program to ensure that site-specific emergency and fire response training is provided at the frequencies established in the license or site procedures. Topics of training may include responsibilities of onsite personnel, postulated accident scenarios, emergency equipment location and use, notification instructions, and recovery actions. The training should also address recent changes to the facility that impact the emergency preparedness and fire protection programs.

The inspector should determine whether 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. Qualifications may include medical examination, functional training on the use of the equipment, and fit testing as appropriate.

The inspector should ensure that sufficiently trained emergency response staff are available during all work shifts. The inspector should conduct interviews with key decision-makers and other appropriate individuals to discuss the emergency training that they have received. The purpose of the interview is to verify that the individual received the proper training and knows what procedures should be implemented in response to certain conditions.

The inspector should verify that offsite responders have received training including site orientation tours. The training should include site-specific hazards such as location and nature of radioactive and/or hazardous materials and any areas where water is prohibited for use in fighting fires. Periodic refresher training should be offered to offsite responders.

03.05 Emergency Equipment and Facilities. The inspector should randomly select equipment and evacuation routes for review. Evacuation routes should be clearly marked and not blocked by equipment storage or locked doors. Emergency supply cabinets and medical kits should be randomly observed, in part, to determine if the supplies are physically present and have not exceeded their expiration dates (for example, survey meter calibrations and battery shelf lives). If possible, the inspector should ask the licensee to randomly conduct operability and functionality tests of equipment staged for emergencies. If problems are identified, the inspector may want to expand the review to include other storage and staging areas, or request that the licensee review its staged equipment for operability.

As part of the review, the inspector should determine whether emergency equipment and supplies are being inventory checked and serviced at the required frequencies. Also, the inspector should determine whether proper inventory levels are being maintained; that is, the supply cabinets contain the supplies that are required to be in that location. The inspector should confirm that the appropriate quantity and number of dosimetry and survey instruments are available, operable, and within calibration.

03.06 Offsite Support Agencies. Offsite support agencies include local law enforcement, hospitals, ambulance services, and fire departments. The inspector should confirm that the licensee has established written agreements with these offsite agencies. The inspector should also confirm that the licensee maintains an up-to-date contact list for these agencies.

The inspector may choose to visit one or more of these offsite support agencies to verify that they understand the details of their emergency response roles with respect to the written agreements. For example, has the licensee provided copies of its emergency instructions to that agency, and does the agency have up-to-date copies of these instructions and procedures?

The inspector should ensure that the licensee has implemented its commitments as documented in the written agreement, such as notification of training opportunities and renewals of the agreement in a timely manner. The inspector must recognize that offsite support agencies are not licensees and are not required to adhere to license requirements such as routine training.

03.07 Audits and Assessments. Audits and assessments are typically conducted by licensees to review its radiation protection program as well as other programs as specified in the license or license application. Since the emergency preparedness and fire protection programs impact the radiation protection program, the emergency response program area should be occasionally assessed by the licensee. The level of effort for the audit or assessment should be commensurate with the size and scope of the program. The inspector should verify that the licensee conducts audits or self-assessments of the program at some reasonable frequency.

If a licensee has audited its program, the inspector should determine if the scope and depth of the audit was comprehensive enough to characterize the program's state of readiness. The audit should also include review of recent drills and exercises, as appropriate. The inspector should verify that audit or assessment findings have been corrected by the licensee.

03.08 Fire Protection. The fire protection requirements vary by site; although, some program attributes apply to all sites. The goal of this inspection effort is to independently evaluate whether the licensee's fire protection capabilities meet license requirements and are adequate to preclude or mitigate the consequences of a fire. Licensees may also be required to implement state or local fire codes which include requirements above and beyond NRC license requirements. The fire protection program usually consists of five aspects that vary by site:

- (1) Control of combustibles and ignition sources
- (2) Operability of fire detection and suppression systems
- (3) Material condition of passive fire protection features
- (4) Implementation of compensatory measures for out-of-service or inoperable equipment and systems
- (5) Staffing of fire brigade

The requirements for the fire protection program are most likely included in the license application. The minimum program requirements consist of placement of fire extinguishers at critical locations throughout the plant, procedures for emergency use of fire extinguishers, and instructions for offsite support for fires beyond the incipient stage. The inspector should verify that the licensee has implemented and continues to implement the fire protection program as specified in the application or license. The inspector should inquire about changes to the program, including expansions or contractions in plant operations.

Many licensees will establish and implement health and safety procedures that would include use of hot work permits. The licensee may conduct hot work on potentially radioactive equipment or structures. The inspector should review the work package and interview key staff to ensure that radiological controls were maintained during the hot work activity.

During site tours, the inspector should visually observe the status of the licensee's fire protection program. The inspector should: (1) observe the licensee's control of combustibles and ignition sources within the radiologically restricted area; (2) randomly confirm that fire extinguishers are being inspected at the required frequencies (usually monthly); (3) observe any hot work in progress during the inspection; (4) ensure that flammable liquids are properly stored in authorized tanks, cans, or cabinets; (5) verify that fire detection panels and suppression equipment are in service; (6) ensure that hose stations are not obstructed by temporary storage of equipment; (7) ensure that fire doors are closed; and (8) verify that oil spill and containment systems are in service as needed for selected equipment such as backup diesel generators.

This IP is not meant to be all-inclusive, and if the inspector plans to conduct a detailed inspection of the fire protection program, other IPs may be used as appropriate.

03.09 Reporting of Events Reporting requirements are provided in regulations, licenses, and license applications. The regulatory reporting requirements are provided in 10 CFR 40.60 and 10 CFR Part 20, Subpart M (§ 20.2201 - § 20.2207). Additional reporting requirements may be added to the license, such as reporting of spills and excursions at operating in-situ recovery mills. Further, the licensee may commit to additional reportability requirements in its license application. The reporting of events includes both telephonic and written reports, depending on the severity of the incident. Traditionally, the NRC has accepted emailed notifications in lieu of telephonic notifications.

The inspector should verify that the licensee has established and implemented procedures for reporting of events to the NRC. The inspector should also confirm that the licensee's procedure contains up-to-date contact information for the NRC. The inspector should review selected events that were not reported to the NRC to verify that the events were correctly assessed by the licensee. Some licensees submit voluntary reports to the NRC, and if these voluntary reports are discussed in the inspection report, the inspector should acknowledge that these reports were submitted at the discretion of the licensee.

89050-04 RESOURCE ESTIMATE

The level of technical expertise needed to conduct the inspection will depend on the complexity of the licensee's emergency preparedness and fire protection programs. Most inspections can be conducted by regional inspectors. However, technical experts from the regional or program office with experience in fire code requirements may be needed to review complex fire protection programs. Inspections of this program area typically would involve one inspector and

would require about a half-day (4 or 5 hours) to complete, depending on the complexity of the program.

89050-05 PROCEDURE COMPLETION

This IP is complete when the inspection staff observe the activities, interview site staff, and review records as needed to satisfy the objectives of this IP. This IP should be completed at least once a year, or at other frequencies as established in the Master Inspection Schedule.

89050-06 REFERENCES

Inspection Manual Chapter 2801, "Uranium Recovery and 11e.(2) Byproduct Material Facility Inspection Program," October 8, 2021

Staff Requirements SECY-98-144, "White Paper on Risk-informed and Performance-based Regulation," March 1, 1999

END

Attachment: Revision History for IP 89050

Attachment 1: Revision History for IP 89050

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number
n/a	ML21196A453 10/08/21 CN 21-034	Initial issuance	n/a	ML21196A455