

NRC INSPECTION MANUAL

PDND

INSPECTION PROCEDURE 71801

DECOMMISSIONING PERFORMANCE AND STATUS REVIEW AT PERMANENTLY SHUTDOWN REACTORS

PROGRAM APPLICABILITY: 2561

SALP FUNCTIONAL AREA: N/A

71801-01 INSPECTION OBJECTIVES

01.01 To evaluate the status of decommissioning and verify whether the licensee and its contracted workforce are conducting decommissioning activities in accordance with licensed requirements.

01.02 To assess the performance of the plant staff and the contracted workforce, and their control and conduct of facility decommissioning. To verify that license and technical specification (TS) requirements and licensee actions described in the Final Safety Analysis Report (FSAR, or equivalent), Post Shutdown Decommissioning Activities Report (PSDAR), and license termination plan (LTP) are met and implemented.

01.03 To conduct a plant tour to evaluate the material integrity of structures, systems, and components (SSCs) necessary for the safe storage of spent fuel and conduct of safe decommissioning.

01.04 To evaluate plant housekeeping and fire protection.

71801-02 INSPECTION REQUIREMENTS

02.01 Status of Decommissioning

- a. Attend and observe the conduct of licensee meetings that plan, review, assess, and/or schedule the conduct of facility decommissioning.
- b. Ascertain whether licensee activities are in accordance with licensed requirements and docketed commitments as stated in the 10 CFR, TS, FSAR (or equivalent), PSDAR, and/or LTP.

- c. Discuss with licensee representatives the status of decommissioning activities, problems encountered, and performance insights.

02.02 Decommissioning Operations

a. Control Room Observations

1. Perform a walkdown of the control station(s) used to conduct decommissioning. Assess the operability and functionality of systems necessary for safe decommissioning. These systems should include, in part, radioactive effluent monitoring (gaseous and liquid), spent fuel pool level and temperature control, and radiation protection monitors and alarms.
2. Review plant operator logs and data taking. Assess the quality and detail of the recorded information. Ascertain whether important facility operations, surveillances, maintenance, and changes in facility conditions are recorded. Verify that out-of-specification datum are appropriately dispositioned and resolved.
3. Observe and assess the plant staff in their quality of the facility control and decommissioning activities. Verify that the staff are cognizant of their responsibilities and duties and aware of facility conditions and activities. Verify that materials within the facility control stations are necessary for the conduct of facility activities. Assess shift turnovers prior to or during major decommissioning activities and verify whether appropriate information are discussed and understood by shift personnel.
4. Verify license-required plant staffing and ascertain whether appropriate management oversight of decommissioning activities is performed.

b. Control and Conduct of Facility Activities

1. Assess whether the plant staff appropriately controls the conduct of facility operations. Observe the performance of pre-job briefs for maintenance, surveillance, decommissioning activities or special evolutions. Assess whether appropriate information regarding command and control, lines of communication, stop work situations, response actions for abnormal or emergency situation, management and quality assurance oversight, and radiation protection considerations are discussed.
2. Ascertain the level of management involvement and whether management's contribution is of value. Value elements could consist of providing a safety perspective; oversight and presence; a questioning attitude; or defence-in-depth to the activity.
3. Select approximately two systems important to decommissioning and verify that system isolations and boundaries are appropriately controlled to maintain the analyzed and reviewed configuration of the plant.

02.03 Plant Tour

- a. Perform a plant tour to assess field conditions and decommissioning activities.
- b. Observe the status of maintenance in-progress, surveillance testing, and dismantlement activities. Verify whether approved work instructions and appropriate worker knowledge exists to conduct the activity safely. Ascertain whether the workers are following approved procedures or work instructions.
- c. Assess the material condition of SSCs. Determine whether these conditions impact the safe storage of spent fuel, worker safety, radiological effluent controls, descriptions described in the TSS, FSAR (or equivalent), LTP, or PSDAR.

02.04 Housekeeping and Fire Protection

- a. Housekeeping. Conduct an plant tour to observe and assess the status of facility housekeeping. Assess whether field conditions contribute to safe decommissioning and do not represent conditions adverse to plant or personnel safety.
- b. Fire Protection
 1. Review the licensee's fire protection plan, fire hazards analysis, or fire protection manual or procedure to understand the licensee's fire protection strategy and facility fire hazards. Ascertain whether the fire plans and procedures reflect the current status of the decommissioning facility and licensed conditions.
 2. Conduct a plant tour to observe and assess the storage of combustibles and flammables. Assess whether field conditions accurately reflect licensee fire analyses, assumptions, and procedure requirements. Ascertain whether fire fighting equipment and stations are properly maintained, inventoried, and ready for use.
 3. Assess whether installed fire detection and suppression systems are effectively maintained, surveillances performed, and capable of performing their intended function.
 4. Ascertain the effectiveness of site fire brigade training and qualification, if required. If offsite capability is utilized, assess the quality of site-specific training provided to these fire fighters regarding radiological hazards and facility configuration. Interview members of the site fire brigade to assess their knowledge of station fire fighting procedures.

71801-03 GUIDANCE

General Guidance

This inspection procedure resulted, in part, from long-term actions taken by the NRC staff in response to NRC Bulletin 94-01, "Potential Fuel Pool Draindown Caused by Inadequate Maintenance Practices at Dresden Unit 1," and a determination that NRC inspection of facilities undergoing decommissioning provides additional assurance that licensed activities will not be adverse to public health and safety or the environment. The primary objective of this inspection procedure (IP) is to status decommissioning and to ensure that facilities activities and operations are appropriately controlled such that adverse conditions and/or occurrences do not develop. This IP is a general topic inspection procedure that provides guidance and inspection requirements for a general assessment of licensee performance and activities. For the inspection of housekeeping and fire protection, this IP should be the primary inspection guidance for these two functional areas.

It is expected that this inspection procedure will be periodically performed when NRC inspectors are at the facility for inspection or tour. For specific or detailed functional area inspections such as management oversight, 50.59 safety evaluations, maintenance and surveillance, or radiological controls, the appropriate decommissioning inspection procedure(s), as described in Manual Chapter 2561, should be used to provide accountability of inspection resources.

This procedure applies to all decommissioning states; however, a different set of concerns will dominate the inspection focus depending on the activities on site or previous licensee performance. The inspector is not required to complete all inspection requirements listed in this IP, nor is the inspector limited to these inspection requirements listed if safety issues are involved. However, the objectives of this IP shall be met. Based on an assessment of licensee performance, the inspector may choose to inspect any aspect of the licensee's process that could adversely affect public health and safety of the environment.

Specific Guidance

Few inspectors are expert in every nuclear-related discipline. Therefore, the inspector should recognize when technical or interpretive assistance is needed to effectively review a safety evaluation or identify a safety concern. This assistance can be obtained through the Project Manager for headquarters technical disciplines. The inspector should review and incorporate, as necessary, the information described in IP 71707, "Operational Safety Verification," for further guidance.

03.01 Status of Decommissioning. This review is to ascertain whether decommissioning is being performed in accordance with license requirements and docketed commitments. The review should be general, with enough specificity for the inspector to be able to document and articulate to NRC management the status of decommissioning. This status should include documenting ongoing and planned decommissioning activities, management or organizational changes, and the schedular conduct of

decommissioning as compared to the PSDAR or LTP schedules. The inspector should also ascertain whether additional inspections are necessary to assess conditions or decommissioning activities that are different than expected or represent changes in performance or quality and make recommendations to NRC management.

03.02 Decommissioning Operations. This inspection requirement provides a performance-based assessment on the quality of decommissioning activities that control and maintain the facility in accordance with license requirements and docketed commitments. Independent observations of the licensee staff, including contracted support and management, that actually conducts decommissioning should be used as the basis for the inspector's performance assessments. This inspection effort could include the licensee corporate staff. Nomenclature referring to control room, plant staff, or site management should be used interchangeably for the assessment of whether facility activities are conducted and controlled with quality and in a manner commensurate with decommissioning safety.

The inspector may choose to observe and assess decommissioning activities such as containment inspections; spent fuel pool operations, heat-up rate, and evaporation rate testing; or, the modification (i.e., change, dismantlement, etc.) of SSCs that form the design basis of the facility. Other operations could include the transportation, packaging, or storage of radioactive wastes, radioactive characterization, or effluent monitoring. Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," lists IPs for the inspection of, in part: 10 CFR 50.59 safety evaluations, maintenance and surveillance, quality assurance, and radiological safety.

03.03 Plant Tour. The inspector should perform a general assessment of plant conditions and activities to ascertain whether decommissioning is being conducted safely. The inspector should tour all accessible areas of the facility with primary attention on areas which contain SSCs necessary for radiological effluent control, control or storage of radioactive wastes, and the safe storage of spent fuel. The inspector should visually inspect the piping and components associated with these SSCs, and the radiation monitors, ventilation systems, and other supporting systems. Inspections should be conducted inside and outside plant structures tracing down the piping and electrical cabling to assure that the material condition of operable systems has not degraded to a point in which these systems can not perform their intended functions. Particular attention should be paid to verifying that dismantlement activities do not adversely impact the operation or functionality of operable SSCs. Detailed SSC inspections should be conducted under the applicable Manual Chapter 2561 IP.

Temporary systems installed at the power plant for the conduct of decommissioning should be inspected. Temporary electrical power and welding power supplies should be appropriately controlled and operated; ventilation systems to maintain or control radiological conditions should be properly maintained and in operation when required; and, temporary electric distribution centers should be properly identified, evaluated, and loaded.

Decommissioning of the facility requires the movement of contaminated material from contaminated areas to an area where the material is surveyed and either free released or packaged for transportation or disposal. For plants in DECON, areas that have been contaminated should be in the process of being cleaned up. This process should result in the gradual reduction of contamination and radiation areas, not in the increase of these areas due to inadequate control of contamination. For plants entering or in long-term storage, the licensee may elect to decontaminate areas of the plant to reduce the spread of contamination or radiation exposures; however, other areas that will not be decontaminated should be appropriately posted. During plant tour, observe the extent of area postings for contamination and radiation. Determine if pathways used to remove contaminated material from the plant are being maintained in a manner that minimizes the spread of contamination. Look for indicators that previously uncontaminated areas are now contaminated or areas that were previously decontaminated are now re-contaminated.

During the plant tour, the inspector should watch workers perform specific tasks to ascertain whether the activities are being conducted safely. This would include a field assessment of worker knowledge gained through questions and answers and a field review of the procedures and/or instructions in use to ascertain their adequacy. The inspector should evaluate whether the workers are cognizant of precautions, prerequisites, and radiation health considerations.

03.04 Housekeeping and Fire Protection

- a. Housekeeping. The inspector should focus on the areas adjacent to and containing SSCs necessary for the safe storage of spent fuel, radiological effluent control, or radiation protection and monitoring. This housekeeping inspection requirement should be performed in conjunction with the fire protection and plant tour inspection requirements to promote efficiency in inspection.
- b. Fire Protection. The purpose of this inspection element is to periodically assess the status of fire protection at the decommissioning facility. The licensee should determine whether the quality and amount of fire prevention, detection, and mitigation features as described in licensing basis documentation are sufficient to ensure that decommissioning can be performed safely and that the spread of contamination can be minimized and controlled. A facility fire protection strategy may include specific elements targeted at spent fuel storage, personnel safety, and/or the minimization of facility damage. Other licensee considerations could include strategies and/or systems specifically implemented for insurance and indemnity purposes. The inspector should focus on fire protection requirements as described in license requirements. These may include: (1) periodic updating of the licensee fire plan to reflect the status of decommissioning; (2) fire brigade training; (3) conduct of fire fighting drills; and, (4) fire detection and suppression

systems provided for independent spent fuel storage facilities, spent fuel pool systems, and other important structures and systems described in the licensed documentation such as the FSAR (or equivalent), PSDAR, or LTP.

Inspection emphasis should also be placed on ensuring that areas undergoing decontamination have fire detection and/or suppression systems capable of fulfilling their intended function. Verify that the fire protection program or plan addresses both transient and permanent fire loading conditions.

71801-04 RESOURCE ESTIMATE

Inspection resources for this inspection procedure will vary from site to site based on NRC management's assessment of licensee performance. In addition, inspection resources will be dependent on the phase of decommissioning being implemented. It is estimated that during active periods of decommissioning approximately 8 onsite inspection hours will be needed to adequately assess and document licensee performance quarterly.

END