

# NRC INSPECTION MANUAL

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## INSPECTION PROCEDURE 36801

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### ORGANIZATION, MANAGEMENT, AND COST CONTROLS AT PERMANENTLY SHUTDOWN REACTORS

PROGRAM APPLICABILITY: 2561

SALP FUNCTIONAL AREA: N/A

#### 36801-01 INSPECTION OBJECTIVES

01.01 To ascertain whether management systems contribute to public health and safety through the proper control, evaluation, and management of power reactor decommissioning activities.

01.02 To evaluate the licensee's decommissioning organization, staffing, qualifications, and training, including that of the contracted workforce.

01.03 To verify that NRC requirements are being met, including the requirements detailed in plant technical specifications (TS), offsite dose calculation manual (ODCM), post-shutdown decommissioning activities report (PSDAR) and license termination plan (LTP). This review also includes review of the emergency preparedness (EP) and fire protection (FP) plans and evaluation of licensee actions related to NRC Bulletins and Commission Orders.

01.04 To evaluate licensee decommissioning planning, scheduling, and cost expenditure.

01.05 To assess the effectiveness of the licensee's review of regulatory information including generic letters and information notices applicable to their power reactor.

#### 36801-02 INSPECTION REQUIREMENTS

##### 02.01 Management Systems

- a. Review the methods in which a licensee resolves employee/safety concerns and provides information to employees, and assess the licensee's effectiveness at identifying and resolving problems adverse to public health and safety.

- b. Review the commitment/corrective action tracking program and procedures. Using licensee actions described in licensing documentation and responses to bulletins and orders, verify that appropriate mechanisms are in place to assure implementation and completion of stated actions.

- c. Assess whether or not the licensee has implemented a cost or personnel reduction strategy that adversely challenges public health or safety.
- d. Review the NRC-OSHA Memorandum of Understanding and assess the number and significance of personnel health and safety accidents at the power reactor site. This review shall only be conducted following approval by NRC management based on unsafe employee work practices and/or conditions.

#### 02.02 Organization, Staffing, Qualifications, and Training

- a. Review the site organization, staffing, and qualifications against descriptions in the TS, Organization Plan, Quality Assurance (QA) Plan, or other licensing basis document such as the ODCM, LTP, or PSDAR. Determine whether the licensee and contractor organization, staffing, and qualifications are in accordance with regulatory requirements.
- b. Evaluate whether the licensee's decommissioning organization and staffing is adjusted by the licensee for changes in the status of decommissioning.
- c. Verify that the certified fuel handler and general employee training programs are being implemented in accordance with licensee procedures and NRC requirements.

#### 02.03 Licensee Commitments and Requirements

- a. Select a representative sample of commitments and/or requirements from the TS, PSDAR, LTP, or ODCM and confirm that they are effectively implemented and met. This review should include a selected sample from the EP and FP plans.
- b. Evaluate the licensee's review, response, and implementation of regulatory requirements described in NRC Bulletins, Commission Orders, or Safety Evaluation Reports. Verify that licensee corrective actions were timely reviewed and implemented in accordance with their docketed responses.

#### 02.04 Decommissioning Planning, Scheduling, and Cost Assessment

- a. Review the PSDAR or LTP, licensee schedules and plans, and docketed information regarding decommissioning planning, scheduling, and cost management.
- b. Evaluate whether licensee decommissioning activities are initiated, sequenced, performed, and completed in a manner that is reasonably consistent with docketed planning and scheduling information.
- c. Assess licensee cost management information, coordinate with the appropriate NRR or NMSS technical branch (if required), and determine whether licensee-docketed decommissioning cost estimates and projections reasonably correlate to actual costs and whether funds from decommissioning funding

assurance requirements described in 10 CFR 50.75 are being used for decommissioning activities, if required.

- d. Verify whether licensee decommissioning costs are within the schedular and expenditure requirements of 10 CFR 50.82.

02.05 Licensee Evaluation of Regulatory Information. Evaluate whether the licensee reviews regulatory information applicable to their power reactor. This information could include the review of NRC Information Notices, Generic Letters, and Regulatory Guides.

## 36801-03 INSPECTION GUIDANCE

### General Guidance

This inspection procedure resulted, in part, from long-term actions taken by the NRC in response to Bulletin 94-01, "Potential Fuel Pool Draindown Caused by Inadequate Maintenance Practices at Dresden Unit 1," and a determination by the NRC staff that NRC inspection of power reactors undergoing decommissioning provides additional assurance that licensee activities will not be adverse to public health and safety. A primary objective of this inspection procedure (IP) is to assure that each licensee has processes, controls, and an organization to effectively implement licensed requirements. This IP applies to all states of decommissioning from the permanent cessation of reactor operations, through SAFSTOR and active component removal, to final site characterization and license termination.

The inspection resources devoted to decommissioning power reactors will be dependent on the phase of decommissioning being implemented. Although this procedure applies to all phases of decommissioning, a different set of concerns will dominate the safety envelope depending on the site activities. The inspector is not required to complete all the inspection requirements listed in this IP, nor is the inspector limited to those inspection requirements listed. 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 organization and management controls that could adversely impact of public health and safety or the environment.

### Specific Guidance

#### 03.01 Management Systems

- a. The handling of employee and/or safety concerns by both a licensee and their employees is described, in part, in the Energy Reorganization Act of 1974, Section 211, Employee Protection; 10 CFR 19.12(a)(4), Instruction to workers; and, 10 CFR 19.20, Employee protection. The inspector should verify that an appropriate process exists for the resolution of conditions brought to management's attention, which may lead or cause a violation of NRC regulations or unnecessary

exposure to radiation. Appropriate management reviews and approvals should continue throughout decommissioning. Elements of an effective process could include: (1) the availability and employee access to information regarding management's resolution of safety concerns; (2) management assessment and response to employee suggestions; (3) use of the programs; (4) and, feedback mechanisms to the originator's particular concerns. The inspector could question plant employees as to their use and knowledge of their rights under these regulations to assess whether an appropriate atmosphere exists to foster the identification and resolution of employee and/or safety concerns. NRC staff guidance is described in NUREG 1499, "Reassessment of the NRC's Program for Protecting Allegers Against Retaliation," section II.A.13, and Temporary Instruction 2515/028, "Employee Concerns Programs." Additional guidance is provided in Commission policy statement (61 FR 24336) entitled "Freedom of Employees in Nuclear Industry to Raise Concerns Without Fear of Retaliation."

- b. A sampling should be taken from licensee commitments and/or corrective actions described in licensee event reports (LERs), exemption requests, license amendments, PSDAR, and LTP descriptions. Verify that appropriate controls are proceduralized to assure that management reviews and approvals are conducted and are commensurate with the importance of the action. Assess the effectiveness of management's trending and tracking of actions/commitments to identify whether adverse trends are occurring and being resolved. An important element to consider is whether the licensee's decommissioning schedule and the activities to be performed parallel the activities described in their PSDAR, LTP, QA plan, or other licensing document. Inspection requirement 02.03 assesses the status of corrective actions.
- c. The NRC staff expects that licensees will restructure, downsize, and make management decisions based on the decommissioning and configuration of their plant. These decisions should be justified based on reasonable assessments that balance safety with other considerations such as costs, schedules, and human performance. The inspector should seek to identify whether reductions in program areas are adverse to public health and safety or the environment. For example, significant reductions in area heating, ventilation and lighting, building maintenance, or grounds preservation could preclude operations or security personnel from effectively evaluating plant conditions and performing their duties required by NRC regulation.

A particularly useful source of information could be plant management, staff personnel, and quality assurance inspectors. Another source could be in the assessment of maintenance and engineering backlogs. The licensee should manage these backlogs regardless of the state of decommissioning. Activities listed on the backlog should not languish without disposition such as management reviews and justifications.

- d. The scheduling of inspection resources to assess OSHA-related activities would be considered infrequent and subject to specific regional management approval. These inspection would be conducted in strict adherence with the NRC-OSHA Memorandum of Understanding. The onsite NRC assessment of personnel health and safety activities, could be necessary to ascertain whether conditions were adverse to the safe storage of spent fuel, radiological safety, or other situations indicative of diminished control of licensed activities. The inspector should demonstrate appropriate discretion in the inspection of personnel-related accidents so as not to adversely impact the licensee or individuals, this includes the preservation of confidential and privacy information. The inspector should focus on the facts involving occurrence, licensee corrective actions, trends, and licensee procedures that provide for personnel safety. Subjective assessments regarding personnel safety should be avoided.

03.02 Organization, Staffing, Qualifications, and Training

- a. The inspector should compare the licensee organization, staff, and qualifications to NRC requirements and the descriptions contained in the PSDAR, LTP, or QA Plan. A representative sample of licensee actions described in the EP and FP plans should also be assessed. Although the intent of this assessment is not to evaluate the technical rigor of these programs based on regulatory requirements, the inspector should evaluate whether licensee corrective actions and/or docketed commitments are being met, and that design basis accidents and events as described in licensing documentation are evaluated and compensated for by licensee procedures and training.
- b. The licensee's organization structure will undergo many changes as the plant transitions through decommissioning. The documents which control the licensee's organization will also change as the plant transitions. The licensee staff should be sufficient to meet regulatory requirements and maintain quality and safety, and commensurate with the conduct of decommissioning activities. Discrepancies between regulatory requirements and current plant needs should be brought to the attention of the licensee, regional management, and the Project Manager.

This inspection element should be performance oriented based on the licensee's effectiveness at fulfilling docketed commitments and meeting regulatory requirements. Performance-based elements characterizing adequate staffing could include the licensee's success at: (1) timely review, implementation, or revision of procedures, drawings, and design changes; (2) managing engineering and maintenance backlogs; (3) supervising preventive and corrective maintenance, plant operations, and decommissioning activities; (4) performing plant tours to assess housekeeping and material condition; and, (5) conducting correct technical evaluations and insightful management reviews.

The inspector should also assess whether the licensee had performed a task analysis of their staff by functional description, job comparison, cost management, or some other consideration. A possible licensee analysis could balance an estimation of future site activities with staff experiences, expertise, or work load. Another element a licensee could consider is the implementation of management promotion, retention, or rotation programs to provide assurance that the staff retains expertise and knowledge of regulatory requirements, safety, and operation. The licensee may or may not have documented these management decisions.

The inspector could also assess whether the site staff can effectively implement site procedures for accidents, events, fire emergencies, etc. This includes the inter-actions between site personnel performing decommissioning activities, security, and radiation protection functions. The inspector shall assure that staffing requirements described in the plant TSs and licensing bases are met. This staffing review could include contracted, site, and corporate personnel.

- c. A review of training should include an assessment of the licensee's implementation of 10 CFR 50.120, if applicable. Although the NRC staff expects that most licensees will apply for full or partial exemption from this requirement, requirements still apply to the certification and periodic training of certified fuel handlers, operators of refueling equipment, and personnel who perform maintenance and surveillance of equipment important to safety. Operator training should include: normal and abnormal fuel handling at the spent fuel pool or Interim Spent Fuel Pool Storage Facility (references 5 and 6); fuel handling accidents and/or events; and, the identification and mitigation of operating conditions adverse to the safe storage of spent fuel or high level radioactive waste to name a few. An effective training program could also include, in part, safety evaluations, modifications, radiation protection, effluent controls, and design changes. The NRC inspection of training for radiation protection, effluent monitoring, and radiological site characterization personnel should be performed by the other applicable IPs listed in Appendix A of IMC 2561.

The inspector should verify that the general employee training (GET) remains an effective tool at assuring personnel and plant safety. This training, at a minimum, should incorporate the material in 10 CFR 19.12 through 19.16, Part 20, plant security requirements, and emergency preparedness actions, if any. GET should be updated as required to reflect the current state of decommissioning and site organization.

### 03.03 Licensee Commitments and Requirements

- a. The inspector should verify that the licensee has identified the set of plant-specific requirements that must be met and has established an effective implementation system to meet these requirements. The principal focus will normally be on

the safe storage and handling of spent fuel and highly radioactive material, effluent controls, site surveys, and license termination activities. Additional reviews should be performed to assess the effectiveness of the licensee at maintaining documentation and recording activities relevant to decommissioning.

This review should include a specific sampling of TS requirements that include surveillance and limiting conditions for operation. The inspector should verify that controls are implemented to track and resolve deficiencies that impact licensed conditions. Prior to a significant change in the status of decommissioning (such as from a long-term storage configuration to active decommissioning or to final site characterization), the inspector should verify that appropriate prerequisites are met. The inspector should select a number of items from each of the TSSs, PSDAR, and LTP, and the ODCM and independently verify that the licensee has met or are meeting their requirements and docketed commitments. This verification could be based on documented licensee surveillances, procedural requirements, or control room records.

- b. As determined by regional or headquarters management, the inspector should independently verify the completion or implementation of licensee corrective actions or docketed commitments in response to NRC actions. These inspections should be performed based on safety significance of the particular issue; however, appropriate consideration of a timely independent review should be considered to provide confidence that licensee actions will satisfactorily implement regulatory requirements. The inspector should also determine whether appropriate administrative control has been applied to assure that licensee staffing changes do not diminish the licensee's effectiveness in accomplishing desired results.

#### 03.04 Decommissioning Planning, Scheduling, and Cost Assessment

- a. A portion of this review is expected to occur in-office based on docketed material. Financial information and reports detailing licensee decommissioning costs can be obtained from the Project Manager and the appropriate NRR or NMSS technical branch.
- b. The scope of this review is to identify whether the licensee is meeting its commitments as described in docketed material. Effort should be on major activities and significant departures from docketed schedules. For example, the NRC staff would be concerned if schedules for steam generator or reactor vessel removal, containment building dismantlement, major soil evacuation, or other large-scale activities were not met or were changed without NRC knowledge. In such situations, the NRC may not be afforded sufficient opportunity for regulatory assessment or inspection to provide assurance that licensee activities were not adverse to the environment or public health and safety. In addition,



NRC evaluation may be necessary to ascertain continued decommissioning financial assurance for those decommissioning activities not yet completed. On the other hand, schedule delays, removal of the "A" charging pump instead of the "B" charging pump, or changes made based on the reasonable application of licensee management discretion would generally not be of regulatory concern. This level of detail would typically not be included in schedules that have been docketed.

- c. The scope of the inspector evaluation detailed in paragraph 02.04c is performance oriented based on licensee activities. The inspector should conduct a comparison analysis of available information to evaluate whether licensee-docketed decommissioning cost estimates for particular projects reasonably correlate to actual costs. The inspector should also perform a generic assessment to ascertain whether the decommissioning project, on whole or in particular, correlates to the docketed cost estimates.

The inspector should understand and report financial performance indicators, with an effort devoted to the identification of trends, not to the subordinate efforts of identifying: (1) cost over- and under-runs for particular activities or (2) why the licensee was ineffective at financial management. The inspector should not question the appropriateness of licensee management decisions, judgements, or considerations. If adverse decommissioning cost expenditure trends are identified, the region should request the appropriate NRR or NMSS staff to review decommissioning fund usage. The inspector assessment should be based on a representative sample of major, minor, or license termination activities.

In determining whether the funds from decommissioning funding assurance mechanisms are used for legitimate decommissioning activities, the NRC staff notes that decommissioning funds may be used as long as: (1) the funds are for legitimate decommissioning activities consistent with the definition of decommissioning in 10 CFR 50.2; (2) the expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the power reactor site in a safe storage condition; and, (3) the withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

- d. The intent of this review is to focus on the particular schedular and expenditure requirements of 10 CFR 50.82(a)(8). In particular, the inspector should evaluate: (1) Whether less than or equal to 3 percent of the generic decommissioning amount, as specified in 10 CFR 50.75, is planned or was used by the licensee for decommissioning planning or minor decommissioning activities. This period of planning and activities is allowable prior to the NRC receipt of the licensee PSDAR. (2) Following certifications that the

licensee has permanently ceased operations and permanently removed all fuel from the reactor vessel, and NRC receipt of the PSDAR, an additional 20 percent of the generic decommissioning amount is freed for major decommissioning activities. (3) For a licensee to exceed 23 percent, the licensee would have to submit a site-specific cost analysis; but, in any case, this cost analysis would have to be submitted within 2 years following permanent cessation of operations. If adverse decommissioning cost expenditure trends are identified, the region should request the appropriate NRR or NMSS staff to review decommissioning fund usage. For definitions and examples of major and minor decommissioning activities refer to Manual Chapter 2561, "NRC Staff Management of Decommissioning Power Reactors."

03.05 Licensee Evaluation of Regulatory Information. While it is not a regulatory requirement that licensees review or implement regulatory guidance and information, licensee assessment of regulatory information is a performance element that provides insight into their safety culture. It can also provide an indication of whether the licensee has isolated itself from the nuclear environment or utilizes industry experience to enhance performance or preclude problems. The licensee should have a process by which industry information is reviewed and evaluated as to its applicability to their power reactor. This information could include operating reactor and health physics information pertinent to the safe storage of spent fuel, radiological assessment and effluent control, or radiation protection safety. Further, implementation of 10 CFR 50.65, The Maintenance Rule, requires licensees to evaluate industry information regarding performance of structures, systems, and components.

#### 36801-04 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 most active periods of decommissioning approximately 28 onsite inspection hours will be needed to adequately assess and document licensee performance semi-annually.

#### 36801-05 REFERENCES

1. 10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel"
2. ANSI N18.1-1971, "Selection and Training of Personnel for Nuclear Power Plants"
3. Regulation Guide 1.8, "Personnel Selection and Training"

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