

NRC INSPECTION MANUAL

PDND

INSPECTION PROCEDURE 40801

SELF-ASSESSMENT, AUDITING, AND CORRECTIVE ACTION AT PERMANENTLY SHUTDOWN REACTORS

PROGRAM APPLICABILITY: 2561

SALP FUNCTIONAL AREA: N/A

40801-01 INSPECTION OBJECTIVE

01.01 To evaluate the effectiveness of licensee controls in identifying, resolving, and preventing issues that degrade safety or the quality of decommissioning. These licensee controls include self-assessment, auditing, corrective actions, and root cause evaluations.

40801-02 INSPECTION REQUIREMENTS

02.01 Preparation

- a. Review the administrative procedures that control the identification, evaluation, and resolution of problems. This review includes procedures for the resolution of nonconformances, material or programmatic deficiencies, or conditions adverse to quality or safety.
- b. Review licensee procedures, Quality Assurance (QA) Plan, or other controlled document for the conduct of self-assessment, audits, and QA audits and surveillances.
- c. Review docketed NRC inspection reports and discuss with regional or resident inspectors (if available) the strengths and weaknesses associated with the licensee's self-assessment, auditing, and corrective action programs.

02.02 Management Reviews and Quality Independence

- a. Evaluate whether effective management reviews are performed for self-assessments, audits, and corrective actions to ensure that management is knowledgeable of plant performance. Determine whether procedural requirements involving management reviews and approvals are commensurate with safety.

- b. Ascertain whether self-assessments and audits are performed by technically-qualified personnel with sufficient independence from the

audited organization. Determine whether audits and assessments are critical of licensee performance and whether effective corrective actions, as required, were initiated to improve performance.

02.03 Identification, Resolution and Prevention of Problems. Select a sample of issues or problems from the list below for detailed analysis. Assess the licensee's ability to identify, resolve, and prevent problems. Verify the completion and effectiveness of corrective actions. Assess the administrative controls (such as trending, tracking, and management reviews) assigned to the particular items.

1. Licensee Event Reports (LERs).
2. Events that do not meet the criteria for an LER which fall within the licensee's corrective action system.
3. Technical Specifications (TSS), license termination plan (LTP), and/or QA Plan audits and surveillances.
4. Deficiencies or conditions adverse to quality associated with structures systems, and components (SSCs) important to the safe storage of spent fuel, radiological effluent monitoring, and radiation safety.
5. Employee and safety concerns.

02.04 Quality Assurance Audits and Surveillances

- a. Review the organization, staffing, and qualifications as defined in the QA Plan, LTP, and/or TSS. Evaluate the effectiveness of the licensee's audit organization in identifying programmatic and implementation weaknesses and areas of declining performance.
- b. Determine if QA is proactive in analyzing the effect of changes in the status of decommissioning or licensee organization, before or after the change occurs. Assess licensee management's resolution of QA audit observations, findings, or weaknesses.

02.05 Other Self-Assessments

- a. Review licensee programs for the conduct of self-assessments. Self-assessments could be in the form of housekeeping tours; supervision of maintenance, surveillance, and operations; training evaluations; or, evaluation of engineering or other processes.
- b. Determine whether the assessments are multi-disciplined, across functional areas, and reviewed by management with sufficient independence, if required. Assess whether the self-assessments are critical and insightful, illustrative of a questioning attitude, and add value to licensee performance.

General Guidance

This inspection procedure (IP) 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 facilities undergoing decommissioning provides additional assurance that licensed activities will not be adverse to public health and safety. The primary objective of this IP is to assure that a licensee's self-assessment, auditing, and corrective action programs are effective at identifying, resolving, and preventing problems. The term "problem" or "occurrence" in this procedure is synonymous with conditions adverse to quality (as described in 10 CFR 50, Appendix B), or any other condition or defect that may be adverse to public health and safety or the environment.

This IP applies to all states of decommissioning from the permanent cessation of reactor operations to final site characterization and release.

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. It is intended that the inspector concentrate on problem identification and resolution rather than on programs and procedures.

Specific Guidance

03.01 Preparation. If possible, the inspector should obtain and review licensee procedures, plans, audits, and self-assessments prior to arrival onsite. The inspector should review previous NRC inspection reports and ascertain the scope of previous reviews and documented licensee performance. The current inspection effort should be devoted to evaluating licensee performance, their resolution of NRC violations and open items, or other items. The inspector should note any reviews or audits demonstrating initiative or particular effective use of industry lessons learned. The inspector should place emphasis on conclusions and corrective actions and document licensee strengths and weaknesses.

The inspector assessment of self-assessment, auditing, and licensee corrective actions should reflect a balanced safety perspective. Appropriate credit should be documented regarding the conduct of licensee activities above and beyond that required by regulations. Similarly, credit for licensee identified deficiencies, programmatic weaknesses, and violations coupled with effective and timely corrective actions should be reviewed and resolved accordingly, in accordance with NUREG 1600, NRC Enforcement Policy. Generally speaking, the self-identification, resolution, and

prevention of problems would be considered a licensee strength. However, if the situation was preventable, recurrent, or of high significance, other enforcement considerations as described in NUREG 1600 would be applicable.

03.02 Management Reviews and Quality Independence. The appropriate level of management review and the independence of auditors and managers who conduct and resolve functional area findings, contributes to decommissioning safety. Management reviews add value when they are timely, result in improvements, and identify generic or programmatic weaknesses. Managers of sufficient organizational responsibility and objectivity should be tasked with decision making regarding the implementation of corrective actions and the resolution of auditor and audited disagreements. The reviewing manager should encourage and resolve differing positions and perspectives. The level of management review and independence for TS audits is normally described in the TSS, LTP, QA Plan, or procedures and should be of a level commensurate with safety.

The inspector should verify that the quality organization has access to upper-line management, and that the QA organization has the authority to effectively use that access. The extent to which QA constructively meets with facility management is a key indicator of the licensee's effectiveness.

A licensee should not sacrifice independence for expertise and experience during the conduct of an audit. In fact, regulations and ANSI standards typically dictate that persons performing audits cannot audit their own work. Independence represents an opportunity to communicate different safety perspectives, engage in critical evaluation, segregate biases, and benefit from other industry lessons learned. This, however, is not to say that experience and expertise are not important, only that a licensee is expected to assign auditors with necessary expertise and experience, with sufficient independence, to perform credible reviews. The inspector should assess the effectiveness of the auditors based on, in part, experience, expertise, findings, and assessments. Further, QA findings, conclusions, and recommendations should receive appropriate treatment by licensee management. Typical performance elements that could indicate appropriate independence and effectiveness of QA and/or management reviews could include: (1) the conduct of third party independent reviews and audits; (2) expert or recognized technical assistance; (3) complement and diversity of the audit team; (4) scope and depth of the audit; (5) complexity, detail, or quality of the findings, conclusions, and recommendations; (6) timely resolution and closure of audit issues; (7) application of audit recommendations to other functional areas; and, (8) identification of findings outside the primary focus of the audit.

03.03 Identification, Resolution and Prevention of Problems. In the assessment of the licensee's corrective action program, a vertical slice review could be performed utilizing multiple examples. A licensee's program should evaluate: (1) the chain of events; (2) cause(s) for significant conditions adverse to quality or safety; (3) operability and/or functionality; (4) reportability;

(5) similar situations and generic implications; and, (6) corrective actions. The timeliness of corrective actions should be commensurate with the safety significance of the item; corrective actions should be determined, as appropriate, for the circumstances. The inspector should determine whether the licensee trends problems and tracks the assigned corrective actions intended to preclude recurrence. An effective organization should foster an atmosphere that focuses on the identification and resolution of problems and discourages the placement of blame.

Generally, a licensee's root cause evaluation process will ask three to five "why" questions prior to reaching one or more probable root cause(s). The root causes are those items that if corrected would have, in itself, prevented the problem from occurring. Therefore, a root cause must be under the control of management and must be the fundamental reason(s) for an occurrence. Additionally, the effectiveness of corrective actions should not to be judged solely on the lack of recurrence but on the absence of the reasons why the original occurrence happened. For example, a hypothetical licensee determined that the root cause why their radioactive waste resin tank overflowed was that the high level tank alarm/auto pump shutoff interlock was in bypass. Therefore, as a corrective action to preclude recurrence, the licensee could have removed the bypass feature. However, the licensee determined that the reasons why the interlock was in bypass were not resolved by the proposed corrective action. These reasons included: failure to follow procedure by the operator; drift of the high level instrument setpoint causing historical problems and operator work-a-rounds; and, operator inattention while filling the tank due to being told to "hang tags" by the control room. When the licensee corrected the "reasons" by: enhancing procedural compliance; resolving the instrument drift problem; and training the operations staff to stop placing additional burdens on operators as they performed systems operations, more assurance was provided to reasonably conclude that similar problems would not recur.

As guidance, the inspector should be aware of corrective actions that primarily focus on discussions, meetings, or training tend to diminish in effectiveness over time. However, corrective actions that enhance procedural requirements, implement safety warnings, or install safety devices are generally immune to external change factors. (CONGER & ELSEA, 1994) In the assessment of a particular occurrence, the inspector should focus on the what, when, where, how, and why, with a secondary consideration devoted to who. In all cases, the inspector should consider the scope of corrective actions and judge whether the applicable 10 CFR 50, Appendix B, criteria were satisfied.

Should the inspector identify any weaknesses in the licensee's cause evaluations or implementation of corrective actions, these findings should be discussed with the Project Manager (PM) and regional management, and the cause(s) of these programmatic problems should be considered for followup. The NRC staff expects that a licensee undergoing decommissioning would have inherited a generally robust corrective/root cause determination program from its experiences during reactor operation. As a result, if

programmatic problems are identified they could be attributed to staffing, training, funding, accountability, scheduling, etc.

A representative sample from the list provided in paragraph 02.03 should be selected to provide a reasonable basis for assessment and conclusion. Sample sizes could include: all LERs and QA or TS/LTP-required audits and a majority of the items designated as employee and safety concerns (because the number of items in these areas would be expected to be relatively few); some (two to three) significant events that don't meet the threshold of an LER; and, a representative sample (10% to 20%) of deficiencies adverse to quality. The inspector has appropriate latitude in the selection of items to be reviewed, however, these selections should be indicative of licensee performance and based on radiation and decommissioning safety. In regard to technical deficiencies associated with dry fuel storage, coordination with the Spent Fuel Projects Office, NMSS, is required. Guidance for the inspection of a licensee's resolution of employee and/or safety concerns is provided in decommissioning IP (IP 36801) entitled "Organization, Management and Cost Controls at Permanently Shutdown Reactors."

03.04 Quality Assurance Audits. Upon permanent cessation of operations, the licensee may either maintain all Part 50 operational TS-required QA audits or request a license amendment to change their TS-required audits to areas of particular safety importance to decommissioning. Some licensees have chosen to maintain their "operational" TS-required audits while decommissioning and not request amendment. In this case, the licensees have managed their audits by directing resources and effort towards the functional areas they deem as being "more" important for the safe conduct of decommissioning, such as design control, safety evaluations, radiation protection, and effluent controls; whereas, marginally acceptable effort was applied to "operational" audits, such as control room operator training, inservice testing, etc. Although this in itself may demonstrate a particular safety perspective or management technique, this type of initiative could reduce the quality of regulatory-required audits. The NRC staff expects that all TS-required audits be performed in a manner commensurate with safety and if there are required audits (or other conditions) that don't contribute to decommissioning safety, the inspector should inform the NRR or NMSS project manager, as appropriate.

The inspector should review the licensee's tracking and handling of audit findings. Resolutions should be timely and focused on correcting the cause(s). The licensee's program should provide contingencies should an impasse be reached between the QA and plant management.

The inspector should be aware of third-party audits, reviews, technical assistance, and investigations and determine whether third-party findings, conclusions, and recommendations receive appropriate treatment by the licensee. It is generally considered a licensee strength when technically-qualified, third party, independent auditors are utilized. On the other hand, the NRC staff has noted some examples where third-party reviews were perfunctory and gave the answer the licensee as looking for. See

Section 03.02 for some other guidance regarding the assessment of audits.

The inspector should interview selected individuals involved with the QA organization to gain their insight on the effectiveness of their effort and the responsiveness of utility management and staff to issues raised. Review licensee performance data and discuss anomalies and trends with facility management to assess the effectiveness of the QA program.

03.05 Self-Assessments. The conduct of self-assessments is, in itself, a valuable indicator of licensee performance. An effective organization, recognizes the effectiveness of highly critical self-assessments that result in improvements and efficiencies.

Staff expertise and knowledge can be assessed by the quality of self-assessments. Management should be supportive of self-assessments, make self-assessments and the resolution of their findings a priority, and develop an atmosphere that encourages individual and functional area improvement. If licensee-required self-assessments are not performed, perfunctory, lack insight or rigor, or are not a critical assessment of performance, it could indicate that: (1) work loads and schedules are over-whelming; (2) blame occurs instead of credit for identifying deficiencies; or, (3) there is a disproportionate emphasis on decommissioning productivity over quality and perhaps safety. Self-assessments builds ownership and responsibility, and reflects on professionalism and the licensee's safety culture.

40801-04 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 32 onsite inspection hours will be needed to adequately assess and document licensee performance semi-annually.

40801-05 REFERENCES

1. ANSI N18.1-1971, "Selection and Training of Personnel for Nuclear Power Plant Personnel"
2. ANSI N18.7-1976, "Quality Assurance for the Operational Phase of Nuclear Power Plants"
3. ANSI N45.2-1977
4. ANSI/ANS 3.2-1982, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

5. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operational)"

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