

NRC INSPECTION MANUAL

RDB

INSPECTION PROCEDURE 37801

DECOMMISSIONING SAFETY REVIEWS, DESIGN CHANGES, AND MODIFICATIONS

Effective Date: 07/01/2025

PROGRAM APPLICABILITY: IMC 2561 A

37801-01 INSPECTION OBJECTIVE

01.01 To verify the licensee's safety review process is in accordance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59, "Changes, tests, and experiments."

37801-02 GENERAL GUIDANCE

This procedure should be conducted annually when a site is in Category 1, "Post Operation Transition," as described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program," or when the site transitions to a new decommissioning strategy (i.e., transitioning from SAFSTOR to DECON). Inspections of the use of 10 CFR 50.59 for sites in other inspection categories should generally be completed under inspection procedure (IP) 71801, "Decommissioning Implementation and Status." As a plant enters decommissioning, inspectors can expect an increased amount of plant modifications. Plant modifications may include temporary or permanent plant changes, such as system abandonments, design changes, procedure changes, equivalency evaluations, calculations and commercial grade dedications. 10 CFR 50.59 remains a critical regulatory tool during decommissioning, ensuring that safety is maintained while allowing for efficient decommissioning activities without unnecessary regulatory delays.

Plants holding a 10 CFR Part 50 license may use 10 CFR 50.59 to conduct changes, tests, experiments, or modifications. The intent of the 10 CFR 50.59 process is to permit licensees to make changes to the facility without prior NRC approval through use of a license amendment, provided the changes maintain acceptable levels of safety as documented in the Final Safety Analysis Report (FSAR) (or equivalent). 10 CFR 50.59(c)(2) identifies eight evaluation criteria that shall be used by the licensee to determine if NRC approval is required prior to implementation of the change, test, experiment or modification. A licensee's 10 CFR 50.59 process typically involves an initial 10 CFR 50.59 screening to determine if a 10 CFR 50.59 evaluation is required. If the screening determines that a 10 CFR 50.59 evaluation is required, the licensee will apply the eight evaluation criteria of 10 CFR 50.59(c)(2) to determine if the change, test, experiment or modification requires a license amendment to complete. Evaluations that concluded a change did not require prior NRC approval are required to be reported to the NRC consistent with 10 CFR 50.71, "Maintenance of records, making of reports."

A licensee's 10 CFR 50.59 process is not the only avenue a licensee can use to make a change. The 10 CFR 50.59 process shall only be used for changes to SSCs described in the FSAR; changes to SSCs described in the Offsite Dose Calculation Manual (ODCM), Quality

Assurance Program Description (QAPD), technical specifications (TSs), emergency preparedness, and security shall be pursued through portions of 10 CFR 50.54, "Conditions of licenses." Specifically, changes to SSCs described in the ODCM, QAPD, and TSs are controlled by 10 CFR 50.54(a)(4), changes associated with security are controlled by 10 CFR 50.54(p), and changes associated with emergency preparedness are controlled by 10 CFR 50.54(q). For changes associated with fire protection, the licensee shall use 10 CFR 50.48, "Fire Protection."

For plants undergoing decommissioning, additional requirements are set forth to provide assurance that decommissioning changes, tests, experiments, and modifications are properly evaluated by licensees. In addition to the requirements in 10 CFR 50.59, decommissioning changes may be made without prior NRC approval or review, if those changes, in accordance with 10 CFR 50.82(a)(6), would not: (1) foreclose the unrestricted release of the site; (2) significantly increase decommissioning costs; (3) cause any significant environmental impact not previously reviewed; or (4) violate the terms of the existing license. Changes that are inconsistent with or result in a significant schedule change from what is described in the Post-Shutdown Decommissioning Activities Report (PSDAR) are required to be reported to the NRC in accordance with 10 CFR 50.82(a)(7).

Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Test, and Experiments," states that Revision 1 of Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Evaluations," provides implementation methods that are acceptable to the NRC staff for complying with the provisions of 10 CFR 50.59. NEI has also published NEI 96-07, Revision 1, Appendix E, "User's Guide for NEI 96-07, Revision 1, Guidelines for 10 CFR 50.59 Implementation." However, NEI 96-07, Revision 1, Appendix E has not been reviewed or endorsed by the NRC and should not be used by NRC staff in evaluating compliance with the provisions of 10 CFR 50.59.

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 if additional concerns are identified. However, the objective of this IP should be met. Inspectors should review a sample of past inspection reports to inform their selection of samples to review.

The inspector can coordinate with the project manager (PM) to identify safety or regulatory significant changes, tests, experiments, or modifications for review. Depending on the vintage of the plant and the decommissioning schedule, significant modifications may include large-scale structures, systems, and components (SSCs) or structure removal activities. If possible, prior to permanent shutdown, the PM and regional inspectors should coordinate and meet with licensee representatives to determine which licensee activities and potential modifications should be reviewed to provide assurance that decommissioning activities can proceed safely.

Inspectors should remain cognizant of the need for technical or interpretive assistance to effectively review a safety evaluation or identify a safety concern. This assistance may be obtained through the NMSS PM, regional subject matter experts, or the regional inspector responsible for site inspection. Regional subject matter experts should be consulted as warranted during review of any 10 CFR 50.59 violations.

03.01 Decommissioning Safety Review Program

Verify that the licensee appropriately implemented the 10 CFR 50.59 process during decommissioning.

Specific Guidance

The focus of this review should be on safety evaluations, with a sampling of screenings and other applicability determinations. After shutdown, the licensee may either implement multiple changes rapidly or gradually introduce them over an extended period. The use of the resident inspector during the initial transition period should be considered. Programmatic aspects of the licensee's 10 CFR 50.59 program, such as training, may be sampled at the inspectors' discretion. Consider if the plant has been in long-term storage (i.e., SAFSTOR), has not recently utilized the 10 CFR 50.59 program, experienced recent violations, and/or there have been indications of program deficiencies from the corrective action program.

Select a sampling of design changes and/or modifications to review. Risk-inform the selection by considering the safety significance, effect on wet storage of spent nuclear fuel, and whether any of the changes involve major decommissioning activities. Inspectors should sample recent 10 CFR 50.59 evaluations and a sampling of screenings and applicability determinations, including supporting engineering modification packages.

The inspector should consider performing field walk-downs to assess if physical modifications align with change packages. The inspector should review the assumptions used in engineering evaluations, such as maintaining negative pressure in containment after enlarging the containment equipment hatch and assess whether they are adequately met by examining factors like smoke test results. The inspector should determine whether the licensee accurately evaluated the current plant configuration, potential design basis accidents, normal and abnormal events, and site characteristics. Safety evaluations written for specific work activities (such as large component removal) should also be evaluated to ensure that such activities do not result in changes to the TSs.

Confirm whether the licensee has adequately evaluated any inter-relationships between a modification and other systems potentially affected by the modification. Such situations could involve SSCs shared between units, structural modifications, and heavy lifts. Review affected procedures, drawings, maintenance records, and calculations to determine if changes negatively impact other SSCs. The inspector should focus on the SSCs necessary to safely store and transport spent fuel and/or highly irradiated materials. The inspector should verify that safety evaluations are performed as required, that drawings and procedures are updated in a timely fashion, and that appropriate training is performed to ensure that personnel properly operate and maintain the affected SSCs.

Examples of such changes could include TS systems and emergency action level instrumentation; examples include: spent fuel pool cooling pump rebuilds, radiological effluent or criticality monitoring instrumentation replacement, spent fuel rack repairs, spent fuel pool level indication, or spent fuel pool heat exchanger tube plugging. Other

examples to review include the removal or modification of a building, contouring or excavation of soil and foundations, diversion of rainwater and sewage system effluent, deactivation of systems and components, replacing cooling systems with lower capacity systems, or modifications to containment to facilitate decommissioning.

Inspectors should not duplicate the inspection efforts completed during implementation of IMC 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packagings," when reviewing evaluations associated with the spent fuel pool. If not covered during implementation of IMC 2690, inspectors should review items such as evaluations for safe load pathways and heavy load drop scenarios, and the review of the engineered features designed to mitigate impact failure of SSCs should a transfer cask fall free or impact an SSC. Similarly, review of 10 CFR 50.59 screenings and evaluations written for the transfer of irradiated fuel should include an assessment of performance for certified fuel handlers. This may include operator command and control, supervisory oversight, man-machine interface changes, and training.

Determine whether the licensee's safety review process committee is appropriately staffed and trained (10 CFR 50.120(b)(2)(ix)). The inspector should ensure that the safety committees are properly staffed and members appropriately trained. If able, the inspector should observe the conduct of a safety review committee and assess the effectiveness of this review body as it relates to: (1) questioning risks, benefits, and the technical adequacy of a particular activity; (2) providing an independent safety perspective; and (3) contributing to plant safety through, in part, the incorporation of lessons learned and experience.

Determine whether design basis documentation, such as calculations, design specifications, vendor manuals, PSDAR, and TSs are updated consistent with design changes.

Additional guidance associated with 10 CFR 50.59 can be found in IMC 0335, "Changes, Tests, and Experiments," and IP 71111.18, "Plant Modifications."

03.02 Problem Identification and Resolution

Verify that the licensee is identifying problems related to safety reviews, design changes, and modifications at an appropriate threshold, and entering them into its corrective action program. If applicable, for a sample of problems documented in the corrective action program, verify that the licensee has identified and implemented appropriate corrective actions.

Specific Guidance

Consider reviewing corrective action program entries that involve misclassification of SSCs, invalidated engineering assumptions, and issues identified while implementing modifications.

37801-04 RESOURCE ESTIMATE

Note that for all decommissioning inspection activities, the frequency of performance, level of effort needed, and specific inspection requirements to be evaluated and verified vary based on the particular stage of decommissioning at a facility, the scope of licensee activities, and the overall decommissioning strategy chosen for the plant (i.e., SAFSTOR or DECON). IMC 2561 contains a discussion of the expected inspection frequency and resource estimates during each phase of decommissioning and should be used when planning resources to conduct this inspection.

37801-05 PROCEDURE COMPLETION

Inspection procedure completion is based on completion of the inspection procedure requirements at the frequency specified in IMC 2561, Appendix A. Inspection findings, open items, follow-up items, and conclusions shall be documented in accordance with IMC 0610 and other relevant regional or NMSS instructions. Inspections resulting from allegations will be documented and dispositioned in accordance with Management Directive 8.8, "Management of Allegations."

37801-06 REFERENCES

IMC 0335, "Changes, Tests, and Experiments"

IP 71111.18, "Plant Modifications"

NEI 96-07, "Guidelines for 10 CFR 50.59 Evaluations"

Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments"

RIS 2016-03, "10 CFR 50.59 Issues Identified in NRC's San Onofre Steam Generator Tube Degradation Lessons Learned Report"

END

Attachment 1: Revision History for IP 37801

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 (Pre-Decisional, Non-Public Information)
N/A	08/11/97 CN 97-012	Initial issuance.	N/A	N/A
N/A	ML20205L624 09/09/20 CN 20-041	Revised to include feedback from inspectors and also for format and editorial changes. The content of this procedure was updated to focus on the inspector's efforts on risk informing the inspection.	N/A	ML20205L622
N/A	ML25139A094 06/27/25 CN 25-022	Revised the format of the procedure for better readability. Added additional guidance to better risk-inform the inspection based on OE since the last revision. IMC 0040 exception granted to bold inspection requirements.	N/A	N/A