

# NRC INSPECTION MANUAL

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## INSPECTION PROCEDURE 71111 ATTACHMENT 17T

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### EVALUATIONS OF CHANGES, TESTS, AND EXPERIMENTS AND PERMANENT PLANT MODIFICATIONS

**INSPECTABLE AREA:** Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications

**CORNERSTONES:** Initiating Events  
Mitigating Systems  
Barrier Integrity

**INSPECTION BASES:** The inspection monitors the effectiveness of the licensee's implementation of changes to facility structures, systems, and components (SSCs), risk significant normal and emergency operating procedures, test programs, and the updated final safety analysis report (UFSAR) in accordance with the requirements of 10 Code of Federal Regulations (CFR) 50.59. The inspection provides assurance that required license amendments have been obtained.

The inspection monitors the implementation of modifications to SSCs. Modifications to one system may also affect the design bases and functioning of interfacing systems as well as introduce the potential for common cause failures.

This inspection procedure verifies aspects of the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for which there are no performance indicators to measure licensee performance. **Potential issues regarding the impact that changes have on security should be raised and addressed under the Security Inspection Program.**

**EFFECTIVE DATE:** January 1, 2016

**LEVEL OF EFFORT** Triennially review 6 to 12 evaluations required by 10 CFR 50.59, 12 to 25 screenings and/or applicability determinations for 10 CFR 50.59, and 5 to 15 permanent plant modifications.

71111.17-01 INSPECTION OBJECTIVES

01.01 Verify that evaluations were performed in accordance with 10 CFR 50.59.

NOTE: Regulatory Guide (RG) 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 methods that are acceptable to the NRC staff for complying with the provisions of 10 CFR 50.59. It should be noted that NEI has also published a NEI 96-07, Revision 1, Appendix E, "User's Guide for NEI 96-7, 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. Therefore, NEI 96-07, Revision 1, Appendix E should not be used by NRC staff in evaluating compliance with the provisions of 10 CFR 50.59. Questions regarding potential 10 CFR 50.59 issues as a result of a licensee's use of Appendix E can be raised with the DORL PM.

01.02 Verify that modifications affecting the design bases, licensing bases, and performance capability of SSCs have been adequately implemented.

01.03 Verify that procedures and design and license basis documentation affected by changes have been adequately updated.

01.04 Verify that design and license basis documentation used to support changes, and that procedures and design and license basis documentation affected by changes, reflect the design and license basis of the facility after the change has been made.

71111.17-02 INSPECTION REQUIREMENTS

02.01 Sample Selection

- a. For the purpose of this inspection, permanent plant modifications include permanent plant changes, design changes, set point changes, procedure changes, equivalency evaluations, suitability analyses, calculations, and commercial grade dedications.
- b. The resident inspector staff and the Nuclear Reactor Regulation project manager should be consulted for recommendations on sample selection.
- c. Review modifications, evaluations performed in accordance with 10 CFR 50.59, and changes, test, or experiments performed since the last triennial modification inspection that the licensee determined did not require 10 CFR 50.59 evaluations based upon the following:
  1. Safety Significance;
  2. Risk Significance;
  3. Complexity.

Substantial changes and modifications performed since the last triennial modification inspection should be reviewed as samples. Samples should be of such complexity that the change affects either the license basis or the 10 CFR 50.2 Design Basis.

Note: Since lists of changes provided by the licensee will not necessarily indicate the complexity and scope of a change, a number of changes will need to be reviewed prior to the inspection to meet the "complexity" criteria contained in section 02.01.c. This is best accomplished by first choosing documents from the list provided by the licensee and then requesting the actual documentation for the changes. An initial review of these changes for complexity prior to the inspection will result in a smaller final list of samples.

d. Vertical Slice Sampling.

The intent of this procedure is to sample substantial changes. After ensuring that the change is substantial, the inspector should perform a vertical slice review, when possible, of supporting and affected documents. Some documents that could be affected by the change are:

1. Procedures;
2. Calculations;
3. Schematics;
4. Plant Specific Standards;
5. UFSAR (including supplements associated with aging management);
6. Technical Requirements Manual.

02.02 Inspection

- a. Inspection of evaluations performed in accordance with 10 CFR 50.59, and changes, test, experiments, or methodology changes that the licensee determined did not require 10 CFR 50.59 evaluations.
  1. Verify that when changes, tests, or experiments were made, evaluations were performed in accordance with 10 CFR 50.59. Verify that the licensee has appropriately concluded that the change, test or experiment can be accomplished without obtaining a license amendment.
  2. Verify that safety issues related to the changes, tests, or experiments have been resolved.
  3. For the changes, tests, or experiments that the licensee determined that evaluations were not required, verify that the licensee's conclusions were correct and consistent with 10 CFR 50.59.
  4. Verify, as appropriate, that design and license basis documentation used to support the changes, and procedures and design and license basis documentation affected by the changes, reflect the design and license basis of the facility after the change has been made.
- b. Inspection of permanent plant modifications.
  1. Verify that supporting design basis documentation have been updated accordingly and are still consistent with the new design. Some examples of

supporting design basis documentation would be calculations, design specifications, and vendor manuals.

2. Verify that license basis documentation have been updated accordingly and are still consistent with the new design. Some examples of license basis documentation that could be affected are the UFSAR, Technical Specification and Bases, and plant specific Safety Evaluation Reports.
3. Verify that other design basis features affected by the modification have been adequately accounted for. Some examples of these type of features include structural, fire protection, flooding, environmental qualification, and potential Emergency Core Cooling System strainer blockage mitigation.
4. Verify that procedures and training plans affected by the modification have been updated adequately. Some examples would be abnormal operating procedures, alarm response procedures, and Licensed Operator Training Manuals. Inspectors may review programmatic procedures to verify that licensee processes and standards are met.
5. Verify that affected test documentation has been updated and/or new test documentation has been initiated as required by applicable test programs. Some examples of these types of tests would be instrument calibration, inservice testing, and breaker clean and inspect.
6. Verify that post-modification testing adequately verified system operability and/or functionality.

See Inspection Procedure (IP) 71111.18, "Plant Modifications", Section 02.02 for additional guidance regarding design review, implementation review, testing review, and updating review.

#### 02.03 Problem Identification and Resolution

Verify that the licensee is identifying permanent plant modification issues and problems related to 10 CFR 50.59 applicability determinations, screenings and evaluations, and entering them in the corrective action program. For a selected sample, evaluate appropriateness of corrective actions. See IP 71152, "Problem Identification and Resolution" for additional guidance.

Verify that the licensee is complying with 10 CFR 50.59 for degraded and non-conforming conditions by selecting evaluations or screenings associated with operability evaluations and temporary modifications.

#### 71111.17-03 RESOURCE ESTIMATE

This inspection procedure is estimated to take 172 to 212 hours and should be performed by engineering specialists knowledgeable in the affected subject areas.

Inspection staffing should consist of at least one electrical and one mechanical engineering inspector. Regional supervision can deviate from this guideline depending upon scheduling restrictions.

71111.17-04 COMPLETION STATUS

Inspection of the minimum sample size will constitute completion of this procedure in the Reactor Programs Systems. That minimum sample size will consist of the review of at least 6 evaluations, 12 screenings and/or applicability determinations, and 5 permanent plant modifications triennially. Refer to Inspection Manual Chapter 2515, "Light-Water Reactor Inspection Program - Operations Phase," for further guidance on procedure completion.

71111.17-05 REFERENCES

IP 71111.18, "Plant Modifications"

IP 71152, "Problem Identification and Resolution"

IMC 2515, "Light-Water Reactor Inspection Program - Operations Phase"

NRC Inspection Manual Part 9900 10 CFR Guidance, "10 CFR 50.59 Changes, Tests, and Experiments"

10 CFR 50.59, "Changes, tests, and experiments."

NRC Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Test, and Experiments," Nov 2000. (ML003759710)

NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Evaluations," (Nov 2000). (ML003771157)

<http://nrr10.nrc.gov/rop/ip71111-17.html>

END

Attachment 1  
Revision History for IP 71111.17T

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Training Required and Completion Date	Comment and Feedback Resolution Accession Number (Pre-Decisional, Non-Public)
NA	<a href="#">ML082670321</a> 01/31/08 <a href="#">CN 08-005</a>	New inspection procedure (IP) which combines the previous IP 71111.02, "Evaluations of Changes, Tests, or Experiments," and the biennial portion of IP 71111.17, "Permanent Plant Modifications" as a triennial inspection.	No	<a href="#">ML080250279</a>
NA	<a href="#">ML073180042</a> 10/31/08 <a href="#">CN 08-031</a>	Revise to include consideration of GSI-191 issue related to potential sump blockage.	No	N/A
NA	ML101340791 03/05/13 CN 13-007	Revised procedure to incorporate recommendations from the modification working group conference.	No	
N/A	ML15208A030 11/13/15 CN 15-024	Revisions are made in order to: (1) ensure that security related issues identified as a result of changes are raised so that they may be considered under the Security Inspection Program; (2) ensure that there is awareness that changes to aging management programs associated with 10 CFR 54.21(d) are within scope of this IP; and (3) ensure that there is awareness that NEI 96-07, Revision 1, Appendix E has not been reviewed or endorsed by the NRC.  Feedback forms incorporated into this revision: 2145.  Feedback forms reviewed but not incorporated: 2062, 2088, and 2109.	No	<a href="#">ML15187A245</a> 71111.17T-2062 <a href="#">ML15306A007</a> 71111.17T-2088 <a href="#">ML15306A008</a> 71111.17T-2109 <a href="#">ML15306A009</a> 71111.17T-2145 <a href="#">ML15306A011</a>

Issue Date: 11/13/15  
Effective Date: 01/01/16

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