



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

# NRC INSPECTION MANUAL

NMSS

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INSPECTION PROCEDURE 88101

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## CONFIGURATION CONTROL

PROGRAM APPLICABILITY: 2630

### 88101-01 INSPECTION OBJECTIVE

01.01 To verify that an appropriate configuration control program has been developed and implemented to handle facility design changes and modifications.

01.02 To conduct performance-based reviews focusing on configuration changes involving dominant risk systems and components.

01.03 To verify that temporary modifications, lifted leads, and jumpers are properly reviewed, approved, and controlled.

### 88101-02 INSPECTION REQUIREMENTS

#### 02.01 Programmatic and Administrative Controls

- a. Determine that procedures have been established for control of design and modification change requests including:
  1. Method for initiating a design or modification change request.
  2. Provisions for documenting completion of required reviews, evaluations, and approvals before implementing the change. The Nuclear Criticality Safety Function should be specifically addressed.
  3. Method for ensuring that proposed change does not involve an unreviewed safety question as described in 10 CFR 76.68 or a change in the technical safety requirements (TSR).
- b. Determine that procedures for the configuration control program have been established to:
  1. Identify the authority and responsibilities of the organizations or personnel responsible for:
    - Performing the design work.
    - Conducting independent design verifications.
    - Approving design input requirements.

- Conducting safety evaluations, including nuclear criticality, chemical, and fire safety.
  - Final approving of a change.
2. Train applicable personnel in the configuration control program procedures, including the engineering, operations, and maintenance staffs.
  3. Define the requirements for auditing design activities, including audit reporting and followup.
- c. Verify that administrative controls for design document control have been established for the following:
1. Controlling changes to approved design change documents.
  2. Controlling or recalling obsolete design change documents such as revised drawings and modification procedures.
  3. Marking the as-built documents for design changes on an interim basis, including document review, approval, and safeguarding the document and related papers until all marked-up changes have been incorporated on the revised documents.
  4. The program directs users of this as-built document to use, and refer to, the marked-up copy, for the purpose of testing, maintenance, and future design change activities, until the revised as-built, document incorporating all the marked-up changes, is officially issued.
  5. Revision of documents incorporating all marked-up changes, are issued and distributed in a timely manner.
  6. Release and distribution of approved design change documents.
- d. Verify that administrative controls and responsibilities have been established commensurate with the timeframe for implementation, to ensure that design changes and modifications will be incorporated into:
1. Plant procedures.
  2. Operator training programs.
  3. Plant drawings.
  4. Safety-bases documents.
- e. Verify that administrative controls have been established to collect and transmit design documentation records to records storage.
- f. Verify that controls require that post-modification acceptance testing be performed per approved test procedures, and the results evaluated against approved acceptance criteria.
- g. Verify that responsibilities and methods have been established for reporting design changes/modifications to the Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 76.68.

## 02.02 Temporary Modifications, Lifted Leads and Jumpers

- a. Verify that controls require the review and approval of temporary modifications in accordance with the facility procedures and 10 CFR 76.68.
- b. Verify that controls require the use of detailed approved procedures when performing temporary modifications.
- c. Verify that controls assign responsibility for approving procedures in 02.02b.
- d. Verify that controls require that a formal record be maintained of the status of temporary modifications, lifted leads and jumpers, temporary strainers, temporary trip points of control equipment, etc.
- e. Verify that controls require evaluation of the need for independent verification, where appropriate, of installation and removal of temporary modifications, lifted leads and jumpers.
- f. Verify that controls require functional testing of equipment following installation or removal of temporary modifications.
- g. Verify that controls require periodic reviews of lifted lead and jumper records, including a check of outstanding entries.

## 02.03 Performance-based Review

- a. Select a major modification and conduct a field walkdown to verify that:
  - The "as-built" modification matches the design documents.
  - Appropriate plant procedures have been updated.
  - Appropriate plant personnel were trained.
  - Components important to safety have been identified and incorporated into the preventive maintenance program.
  - The change does not conflict with TSRs.
  - Any nuclear criticality safety control identified in the change has been implemented, whether active, passive, or administrative.
- b. Select four change packages and verify that any open items have been evaluated and accepted by the appropriate authority, and the open items have been prioritized, scheduled for completion in a timely manner, and are being tracked. Review the test results and verify that they are consistent with the established acceptance criteria and that criteria appear reasonable.

88101-03 INSPECTION GUIDANCE

### General Guidance

Safety Analysis Report (SAR) Section 6.3 outlines the specific elements of the GDP Plant Changes and Configuration Management Program. In addition, the Quality

Assurance Program (QAP) Section 2.3 outlines the design controls as applied in a graded approach to "Q," "AQ," and "NCS AQ" items. The inspector must verify that the design change was appropriately classified and the controls of that classification were applied. Requirements for the facility's safety committees to review proposed design changes and modifications are defined in section 6.3 of the 3.5 of the TSR. Requirements for evaluation of proposed design changes and modifications are further defined in 10 CFR 76.68. Basic Requirement 3 and Supplement 3S-1 of NQA-1-1989 provides the bases for the QAP modification control.

### 03.01 Specific Guidance

- a. Inspection Requirements 02.01 a.2 and a.3. Modifications or design changes that cause a change in the system or component description in the SAR require a written 10 CFR 76.68 safety evaluation to assess whether the change constitutes an unreviewed safety question or a change in the facility TSR. An onsite review committee is normally charged by the TSR with this review responsibility. The inspector should ensure that:
  - 1. An administrative system exists that ensures formal review of all facility change proposals to assess whether the proposed design changes result in changes to SAR system or component descriptions.
  - 2. If Design Change Requests were returned by onsite or offsite review committees because of a need for substantial technical revision, the resultant, revised 10 CFR 76.68 safety evaluations were again reviewed enroute to approval by the committee(s), so designated by the facility TSR, before design change implementation.
- b. Inspection Requirement 02.01 d3. The inspector should ensure that measures have been provided for temporary updating of drawings pending formal issuance. A graded approach to this can be taken, depending on the complexity of the change, its safety significance, and the time needed to complete the revisions. Where temporary mark-ups are used, the inspector should ensure that the drawing is "usable."
- c. The following is a list of some of the items that should exist or be referenced in a completed design package:
  - 1. Completed forms that initiated the design change.
  - 2. Completed 10 CFR 76.68 safety evaluation.
  - 3. Reference to documents that require revision as a result of the design change, such as drawings, vendor manuals, TSR, procedures, training programs, SAR, etc.
  - 4. Documentation of the performance of independent verification.
  - 5. Documentation of calculations and analyses used.
  - 6. Equipment procurement documentation and applicable documents related to environmental and seismic qualifications.
  - 7. Identification of work requests and installation procedures used, including completed post-modification tests.

8. Documentation of component or system turnover at completion or post-modification testing.
9. Documentation of any nuclear criticality safety controls of chemical safety controls.

d. Inspection Requirement 02.01.g

1. Paragraph (a) of 10 CFR 76.68 requires that a written safety evaluation be developed and maintained for each facility or procedure change to that described in the SAR to ensure that an unreviewed safety question or change to the TSRs is not generated. The bases for these findings must be included in the evaluation. Historically, failure to conduct adequate written safety evaluations has been the subject of violations of NRC regulations. Responsibility should be assigned in writing by the facility to ensure that these evaluations will be performed.

For significant design changes that affect several plant systems, an integrated safety evaluation should be performed in addition to discipline-specific safety evaluations to ensure that a comprehensive review of the change against the design objectives of affected plant systems is conducted.

It has been found that the facility's philosophical approach to 10 CFR 76.68 safety evaluations has sometimes placed significance on identifying potential failure modes, in lieu of examining the potential consequences of system or component failures. The inspector should ensure that the facility's programs examine potential consequences of system or component failures, in conducting the 10 CFR 76.68 safety evaluations for design changes and modifications (i.e., the question, "what would happen if..." is explored and answered during the conduct of safety evaluations).

2. Paragraph (b) of 10 CFR 76.68 requires that the facility furnish to NRC, annually or at shorter intervals, a report containing a brief description of facility and procedure changes, that were implemented without prior Commission approval. The report must include a brief summary of the safety evaluation made for each change reported. Responsibility should be assigned in writing, by the facility, to ensure that these items are reported as required.

- e. Inspection Requirement 02.02.a. Guidance regarding review of temporary modifications pursuant to 10 CFR 76.68 can be found in the 10 CFR 50.59 subsection of the Guidance section of the IE Manual (entitled, "Part 9800 CFR Discussions; Changes to Facilities, Procedures, and Tests for Experiments").

88101-04 RESOURCE ESTIMATE

An inspection performed using this inspection procedure is estimated to require 40 hours of inspector resources. This estimate is only for the direct inspection effort and does not include preparation for and documentation of the inspection.

88101-05 REFERENCES

10 CFR 76.68

NQA-1-1989, Section 3 and Supplement 3S-1

Section 6.3 of the Portsmouth and Paducah Gaseous Diffusion Plants Safety Analysis Reports.

NRC Inspection Procedure 37702

END