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## INSPECTION PROCEDURE 65001

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### INSPECTIONS OF INSPECTIONS, TESTS, ANALYSES AND ACCEPTANCE CRITERIA (ITAAC) RELATED WORK

PROGRAM APPLICABILITY: 2503

This procedure provides guidance for the direct inspection of work activities for structures, systems, and components (SSCs) that are associated with inspections, tests, analyses, and acceptance criteria (ITAAC).

#### 65001-01 INSPECTION OBJECTIVES

01.01 To determine, by direct inspection, whether ITAAC related construction activities were conducted in accordance with applicable quality, technical, and regulatory requirements.

01.02 To evaluate licensee compliance with construction related requirements associated with the acceptance criteria of specific ITAAC.

#### 65001-02 INSPECTION REQUIREMENTS AND GUIDANCE

##### 02.01 BACKGROUND

02.01.a This procedure provides guidance for the direct inspection of work activities for structures, systems, and components (SSCs) that are associated with inspections, tests, analyses, and acceptance criteria (ITAAC).

02.01.b The NRC will focus on direct inspections of construction activities related to targeted ITAAC. The overall ITAAC inspection philosophy is described in detail in Inspection Manual Chapters 2503, "Construction Inspection Program: Inspections of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Related Work," and 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

- 02.01.c During the inspection planning process, the inspector should review the applicable site data in the Construction Inspection Program Information Management System (CIPIMS) to determine if any previously identified open issues, findings, or observations are relevant to the process or program inspection being planned.
- 02.01.d As a part of the planning process, inspectors should ensure that the SSC selected for inspections of targeted ITAAC are representative of similar ITAAC work in the same family (An ITAAC family is a grouping of ITAAC that are related through similar construction processes, resulting products, and general inspection attributes). This is accomplished by determining whether multiple contractors or different programmatic controls are involved in the same process or program for the given inspection. If the same licensee programmatic controls govern all construction activities being inspected, the targeted ITAAC selected for review should be representative of these activities. However, if different contractors using their own unique program controls are performing similar work, NRC inspection planning should consider inspecting some additional SSCs from the different contractors as another independent inspection sample.
- 02.02 Direct Inspection: Inspectors should perform direct inspections as prescribed by the attached inspection procedures to determine whether the ITAAC related SSC construction activity was completed in accordance with applicable quality, technical, and regulatory requirements. NRC inspections should include one or more of the following direct inspection techniques: (1) Observation of in-process work activities, (2) Review of completed records of work activities, or (3) Independent assessment or inspection of completed work activities.

Guidance:

- 02.02.a Guidance for each of the direct inspection techniques indicated above is provided in Appendix 1 of this IP.
- 02.02.b Technical requirements are established by the final design of the facility. The final design is prescribed by a “flow-down” of technical requirements from the NRC-approved safety analysis report to design specifications and drawings. These design output documents will usually reference industry codes and standards that provide specific requirements for the design, fabrication, assembly, and testing of the SSC.
- 02.02.c Quality requirements are first defined by 10 CFR 50, Appendix B. The applicant/licensee is required by 10 CFR Part 50 and Part 52 to describe how they intend to meet the requirements of 10 CFR Part 50, Appendix B in their quality assurance program description (QAPD). The QAPD is reviewed and approved by the NRC staff. The applicable quality assurance program requirements are further defined by the licensee’s quality assurance program implementing documents.

02.02.d The IP 65001 procedures are not intended to implement a programmatic evaluation of Quality Assurance program effectiveness. This will be accomplished as part of inspections directed by IMC-2504. However, the

Inspectors should familiarize themselves with the quality assurance program requirements that apply to the work activity they are inspecting and, as applicable, evaluate the implementation of QA requirements directly applicable to the work activity being inspected. Generic guidance on QA inspection is included in Appendix 2. Additional guidance on evaluating QA Program implementation can be found in IP 35007, "Quality Assurance Program Implementation during Construction and Pre-Construction Activities." Some of the attached IPs may also include specific QA program inspection requirements.

NOTE: When the licensee subcontracts the work activity to another organization, the requirements of 10 CFR 50, Appendix B must be appropriately passed down to the contractor. The licensee is always ultimately responsible for the quality of the SSC; therefore, the licensee should be providing an adequate level of quality assurance oversight of the contractor, even if the contractor has a QAPD that has been reviewed and approved by NRC staff. The inspectors should be cognizant of the adequacy of the licensee's oversight. The inspectors, when appropriate, should review (or observe) applicable licensee audits and surveillances of their contractors.

02.02.e The inspectors should document the specific quality assurance program elements that are inspected during each inspection within the scope section of the IP used. For example, if the inspector reviews a sample of corrective action documents associated with SSCs that are within the scope of a particular inspection, the inspectors should document the scope of that review under the applicable IP 65001 attachment.

02.03 ITAAC Acceptance Criteria Verification: The inspector should review the licensee's plan for completion of the applicable ITAAC associated with the work activities that are within the scope of this IP. The inspectors should review this plan, and verify that the activities that the licensee intends to credit for future ITAAC closure were reviewed during the inspection. For example, if the licensee intends to rely on a specific QC observation during the installation of a SSC, the inspector should review a sample of these QC observations to determine whether the activity was performed in accordance with applicable quality and technical requirements.

Guidance:

02.03.a The successful implementation of section 02.02 of this IP should ensure that the NRC has adequately inspected the activities which the licensee will rely on to support the closure of ITAAC; however, the NRC inspector should also verify that the inspected activities appropriately support ITAAC closure, and that they were

adequate to ensure that the as-built facility satisfies the top level design and performance standards specified in the COL.

- 02.03.b Inspectors should be aware that several ITAAC may have performance criteria and technical details related to more disciplines than just the IP being implemented. Accordingly, the inspection procedures may guide the inspectors to other related IPs. For example, if inspecting MOVs using the Valves IP, the guidance for performing an inspection of the motor will be found in the Electrical Components IP. Thus the inspector should reference the Electrical Components procedure as needed to support the specific inspection being performed.

#### 65001-04 RESOURCE ESTIMATE

There is no resource estimates associated with this portion of this procedure. All planning, coordination, and inspection resources expended in the conduct of IP 65001 activities should be allocated to one of the IPs attached to this procedure.

Inspections of ITAAC or related construction activities should be recorded in CIPIMS. The CIPIMS entry should identify the selected ITAAC and the specific IP(s) linked to the ITAAC.

END

Appendix:

Appendix 1: Additional Guidance on Direct Inspection Techniques

Appendix 2: Guidance on the Evaluation of QA Program Implementation

Additional Inspection Procedures associated with the ITAAC Matrix as listed in IMC 2503 AppA

- 65001.01 Inspection of ITAAC-Related Foundations and Buildings
- 65001.02 Inspection of ITAAC-Related Installation of Structural Concrete
- 65001.03 Inspection of ITAAC-Related Installation of Piping
- 65001.04 Inspection of ITAAC-Related Installation of Pipe Supports & Restraints
- 65001.05 Inspection of ITAAC-Related Installation of Reactor Pressure Vessel & Internals
- 65001.06 Inspection of ITAAC-Related Installation of Mechanical Components
- 65001.07 Inspection of ITAAC-Related Installation of Valves
- 65001.08 Inspection of ITAAC-Related Installation of Electrical Components & Systems
- 65001.09 Inspection of ITAAC-Related Installation of Electric and Fiber Optic Cable
- 65001.10 Inspection of ITAAC-Related Installation of Instrument Components & Systems
- 65001.11 Construction Inspection Program Inspection of ITAAC-Related Containment Integrity & Containment Penetrations
- 65001.12 Inspection of ITAAC-Related Installation of Heating, Ventilating, and Air Conditioning Systems
- 65001.13 Inspection of ITAAC-Related Installation of Load Handling Equipment & Fuel Racks
- 65001.14 Inspection of ITAAC-Related Installation of Complex Systems with Multiple Components
- 65001.15 Inspection of ITAAC-Related Installation of Fire Protection Equipment
- 65001.16 Inspection of ITAAC-Related Engineering
- 65001.17 Inspection of ITAAC-Related Security Structures, Systems, and Components
- 65001.18 Inspection of Emergency Planning ITAAC
- 65001.19 Inspection of Installation of ITAAC-Related Radiation Monitoring Components and Systems
- 65001.20 Inspection of Safety-Related Piping DAC-Related ITAAC
- 65001.21 Inspection of Pipe Rupture Hazard Analysis Design Acceptance Criteria (DAC) – Related ITAAC
- 65001.22 Inspection of Digital Instrumentation and Control (DI&C) System/Software Design Acceptance Criteria (DAC) – Related to ITAAC
- 65001.23 Inspection of Human Factors Engineering Integrated System Validation ITAAC
- 65001.A ITAAC Attributes for As-Built Inspection
- 65001.B Inspection of the ITAAC-Related Welding Program
- 65001.C Inspection of the ITAAC-Related Construction Test Program
- 65001.D Inspection of the ITAAC-Related Operational Testing Program
- 65001.E Inspection of the ITAAC-Related Qualification Program
- 65001.F Inspection of the ITAAC-Related Design and Fabrication Requirements

Attachment 1: Revision History for IP 65001

## Appendix 1

### Additional Guidance on Direct Inspection Techniques

#### Direct Observation:

- Observe in-process construction-related activities (fabrication, qualification, assembly, installation, inspection, examination, and testing) to determine whether the activity was performed in accordance with work control documents (e.g., applicable instructions, procedures, and/or drawings).
- During the observation of in-process construction-related activities, the inspectors should document relevant information to support other elements of their inspection.
- For example, during the observation of a construction test, the inspectors should note the following: (1) name of person performing test, (2) version of test procedure, (3) serial numbers of measuring and testing equipment, (4) component serial number or other unique identifier, etc. This information can then be used to verify that test personnel were adequately qualified, that the correct version of the testing procedure was used, that the measuring and test equipment was properly calibrated, and that the equipment met the proper qualification requirements.

#### Record Review:

- The inspectors should review a sample of completed records to determine whether the construction-related work activity was performed in accordance with applicable instructions, procedures, and/or drawings. For the records reviewed, the inspectors should determine whether the records were (1) adequate to furnish identifiable and retrievable evidence of activities affecting quality, and (2) met other requirements prescribed by the licensee's record management program.
- If possible, the inspectors should also perform a walk-down of the completed work activity associated with the records reviewed, to determine whether the as-built SSC conforms with the final design, construction documents, and the records reviewed.

#### Independent Assessment/Inspection:

The inspectors may also conduct an independent assessment or inspection (walk-down, measurement, etc.) to determine whether the as-built SSC conforms to the final design.

## Appendix 2

### Guidance on the Evaluation of QA Program Implementation

The following inspection requirements do not represent all of the quality assurance requirements that apply to construction-related work activities, but are a general list of those requirements that can be reviewed during most routine inspections. As applicable, verify the following quality requirements:

- a. QA Program (Criterion II):
  - Personnel Training and Qualification: Review a sample of training and qualification records for personnel involved with the installation, fabrication, assembly, and testing of SSCs to determine whether personnel were adequately qualified.
  - Controlled Conditions: For activities inspected, verify that the licensee has taken appropriate actions to assure that the activity was accomplished under suitably controlled conditions. Specifically, the inspectors should observe or review construction activities to determine whether the licensee used appropriate equipment; maintained suitable environmental conditions for accomplishing the activity, such as adequate cleanness; and verified that all prerequisites for the given activity have been satisfied.
- b. Instructions, Procedures, and Drawings (Criterion V): During the observation and/or review of construction activities, the inspectors should verify that that appropriate implementing documents are available and being used in the performance of work activities.
- c. Qualification and Certification of Material, Equipment, and Services (Criterion VII): The inspectors should review records to determine whether purchased material, equipment, and services conform to the procurement documents.
- d. Identification and Control of Materials, Parts, and Components (Criterion VIII): During the observation and/or review of construction activities, the inspectors should verify that that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item, as required.
- e. Calibration of Measuring and Testing Equipment (M&TE) (Criterion XII): For the M&TE used, review calibration records to determine whether the equipment was properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

- f. Handling, Storage and Shipping (Criterion XIII): The inspectors should observe (e.g., walk-down) the licensee's storage or work area to determine whether the licensee adequately controlled the handling, storage, shipping, cleaning and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration.
- g. Nonconforming Materials, Parts, or Components (Criterion XV): The inspectors should review a sample of nonconformance reports associated with the work activity inspected to determine whether the nonconforming items were reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures.
- h. Corrective Action (Criterion XVI): The inspectors should review a sample of corrective action documents to determine whether the conditions adverse to quality were properly identified and corrected.
- i. Quality Assurance Records (Criterion XVII): For the records reviewed above, the inspectors should determine whether the records were (1) adequate to furnish identifiable and retrievable evidence of activities affecting quality, and (2) met other requirements prescribed by the licensee's record management program.

Attachment 1 - Revision History For 65001

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion date	Comment and Feedback Resolution Accession Number
N/A	10/03/07 CN 07-030	Researched commitments for 4 years and found none.  Initial Issuance.	N/A	N/A
N/A	ML13182A233 08/13/13 CN 13-017	Complete re-write to address current inspection program policies.  Periodic update.	N/A	ML13182A234