ATTACHMENT 65001.14
INSPECTION OF ITAAC-RELATED INSTALLATION OF
COMPLEX SYSTEMS WITH MULTIPLE COMPONENTS

PROGRAM APPLICABILITY: 2503

65001.06-01 INSPECTION OBJECTIVES

01.01 To determine whether system component installation general records, welding records, and test/verification records reflect work accomplishment in accordance with design specifications, Code requirements, and approved procedures.

01.02 To determine if any changes or modifications have been performed to the certified design. If changes are identified, determine if the modifications are consistent with the original design and licensing basis. Ensure 50.59 (or similar process) evaluation has been performed, as applicable.

01.03 To determine whether ITAAC-related tests and verification activities are being conducted in accordance with design specifications, approved procedures, and design criteria.

01.04 To determine if appropriate seismic and environmental qualification criteria have been met.

01.05 To evaluate the adequacy of the implementation of the specific quality assurance program requirements related to system component installation activities and assure problems are entered into the corrective action process.

65001.14-02 INSPECTION REQUIREMENTS AND GUIDANCE

This procedure is intended to address systems holistically, as well as attributes that cross disciplinary boundaries (e.g. electrical, I&C, and valves all associated with the same ITAAC). This procedure will be used when the nature of the ITAAC does not lend itself to clear placement under a component level procedure. Inspectors should reference the appropriate Inspection Procedure (IP) 65001 component level procedure for specific disciplinary information as described in IP 65001 Section 03.02.

02.01 General Installation. The system to be inspected shall be assigned by the ITAAC scheduler. Select a system for inspection under this procedure. Preference should be given to those systems with ITAAC targeted for inspection. Through direct inspection, confirm that the following attributes, as applicable, have been met:

a. Verify by walk down or other means that installed system configuration will support system functions as described in the Design Control Document (DCD). System installation attributes include proper location, placement (such as relative elevation), tank volumes, area dimensions, quantity, material type/shape/size,

special features such as coatings and insulation, physical orientation, alignment, seismic and other mounting requirements, flow direction, tolerances, and expansion clearance.

b. Temporary test equipment removed. Temporary equipment includes blank flanges, temporary flush strainers, test rigs, jumpers, and test gages.

c. Appropriate drawings, vendor manuals and work procedures are available to installers. Installation requirements, construction drawings, specifications, and work procedures are of the latest approved issue.

d. Hold points are observed and quality inspections are properly conducted, as required by the approved quality assurance program and procedures.

e. Preparation of installation and inspection records meet quality program requirements.

f. Field changes relevant to the work being observed have been processed in accordance with the applicable program requirements.

Guidance: During the walkdown of the selected system(s), inspectors should consider the following questions:

1. Is the installed system consistent with the piping and instrumentation diagram?

2. Will equipment and instrumentation elevations support the design function?

3. Has adequate sloping of piping and instrument tubing been provided?

4. Are required equipment protection barriers (such as walls) and systems (such as freeze protection) in place and intact?

5. Does the location of the equipment make it susceptible to flooding, fire, high energy line breaks, or other environmental concerns?

6. Has adequate physical separation/electrical isolation been provided?

7. Are there any non-seismic structures, systems, and components (SSCs) surrounding the system which require evaluation for impact upon the system?

8. Does the location of equipment facilitate manual operator action, if required? Are ladders, catwalks and platforms available to support manual operation? Are any required special tools or personal protective equipment staged and available?

9. Are base plates, hangers, and struts installed properly?

10. Is system piping intact? Is insulation installed as necessary? Are blank flanges installed or removed as necessary?

11. Are support systems, such as instrument air, cooling water or control power, installed and intact?
12. Are valves installed correctly? Check items such as tightness of body to bonnet bolts or nuts, tightness of flange bolts, valve hand wheels or operators installed correctly.

13. Are component labels present and properly installed?

14. Are flow direction sensitive components installed in the correct orientation?

Field observations can include independent measurement/observation or observation of licensee/contractor inspections. While all applicable attributes do not need to be reviewed for each sample, the majority should be reviewed and samples/attributes reviewed should include various facets of installation activities.

Records should document the status of the system, confirm that required inspections have been performed by appropriately qualified personnel, and confirm all critical installation requirements and ITAAC requirements have been met. These records should be properly stored in accordance with quality assurance requirements. Examples of system inspections that should be formally documented and able to be inspected are system cleanliness, flushes, leak checks, hydrostatic tests, non-destructive evaluations of welds, electrical insulation checks, wiring checks, etc.

02.02 Design Modification Review. For the system(s) being inspected, determine if any changes or modifications have been performed to the certified design. If changes are identified, determine if the modifications are consistent with the original design and licensing basis. Ensure 50.59 (or similar process) evaluation has been performed, as applicable.

Guidance: The purpose of the design modification inspection is to verify that the system(s) will function as required. In the process of reviewing the design, inspectors should verify the appropriateness of design assumptions, boundary conditions, and models. Independent calculations by the inspectors may be required to verify appropriateness of the licensee's analysis methods. The interfaces between safety related and non-safety related systems should also be reviewed.

02.03 Testing and Verification. Select a sufficient number of ITAAC-related testing activities to assure that testing is conducted in accordance with established procedures and test acceptance criteria have been met.

Guidance: The inspector should identify testing activities for which specific acceptance criteria have been established and select those for observation that are best confirmed through direct observation. Although direct observation is the preferred method of inspection, data/record review is an acceptable substitute to meet the intention of this inspection procedure.

This inspection should be coordinated with IP 65001.C "Construction Testing," IP 65001.D "Operational Testing" and Inspection Manual Chapter (IMC) 2504 "Non-ITAAC Inspections" guidance. Sample size will be dependant on guidance from these references and the targeted ITAAC set.

02.04 Qualification Criteria. Select a sufficient number of ITAAC-related qualification items to ensure appropriate seismic and environmental qualification criteria have been met.

Guidance: The inspector should verify that equipment qualification is suitable for the environment expected under all conditions. This should include conditions such as temperature, humidity, radiation, pressure, voltage, and vibration.

This inspection should be coordinated with IP 65001.E "Qualification Criteria." Sample size will be dependant on guidance from these references and the targeted ITAAC set.

02.05 Problem Identification and Resolution: The inspector should confirm that problems identified during the inspection are entered into the licensee/constructor corrective action program in accordance with program requirements. The inspector may review licensee actions to address similar or related problems that were previously identified, in order to check the extent of condition and confirm the effectiveness of the licensee's corrective measures.

Guidance: This inspection is to assure that problems are entered into the applicable process to assure corrective actions appropriate to the circumstances are developed and prioritized. Inspections of Quality Assurance Program implementation, effectiveness of Problem Identification and Resolution, and Self-Assessment will be performed under the IMC 2504 process.

65001.14-03 RESOURCE ESTIMATE

Inspection resources necessary to complete this inspection procedure are estimated to be 1080 hours of direct inspection effort over the course of plant construction.

65001.14-04 REFERENCES

Inspection Procedure 71111.04	"Equipment Alignment"
Inspection Procedure 71111.17	"Permanent Plant Modifications"
Inspection Procedure 71111.21	"Component Design Bases Inspection"
Inspection Procedure 71111.DS	"Plant Design"
Inspection Procedure 71152	"Identification and Resolution of Problems"

END

Attachment 1: Revision History

Attachment 1

Revision History For 65001.14

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	07/29/08 CN 08-021	Researched commitments for 4 years and found none. Initial issuance to support ITAAC related inspections under 10CFR52.	N/A	N/A	N/A