

### PART 52, PRESERVICE INSPECTION - DATA REVIEW AND EVALUATION

PROGRAM APPLICABILITY: 2504

#### 73757-01 INSPECTION OBJECTIVES

To ascertain, whether the reported data covers the scope of examination required for the Preservice (PSI) Inspection of general components listed in the tables of IWB-2500, IWC-2500, and IWD-2500 of ASME Section XI, as described in: the applicable ASME Code, Section III and Section XI; the technical requirements manual (TRM) and/or site director procedures manual (SDPM); and the PSI program filed with the NRC.

To ascertain whether the reported data covers the scope of examination required for the PSI of critical ASME Class 1 components as described in: the applicable ASME Code, the TRM/SDPM, and PSI program filed with the NRC.

#### 73757-02 INSPECTION REQUIREMENTS AND GUIDANCE

General Guidance: The inspections of interest in this procedure are those nondestructive examinations of Class 1, 2, and 3 components performed to meet the requirements of the TRM/SDPM, and the PSI program filed with the NRC. **Preservice testing and Inservice testing of pumps and valves as described in ASME Code for Operations and Maintenance of Nuclear Plants (OM Code)** is not included within the scope of this procedure.

Examination data, test results, and other NDE data and records are essential to establish a baseline for comparison with future examinations as part of the history of findings and indications. Evaluation of the previous growth rate of flaws and other indications permits a realistic prediction of expected further growth based on valid examination data. It is, therefore, essential to have complete, reliable, and clear NDE data, and records for each examination.

This inspection procedure will review examination findings to assure that corrective measures are taken on adverse findings, and to ensure that the licensee has utilized an Authorized Nuclear Inservice Inspector (ANII), as required by regulation. **If the ANII Code responsibilities appear to not be met, consider the Enforcement options and refer the issue to the NRC Headquarters.**

For the purpose of this inspection procedure, the term, "PSI/ISI program," includes the PSI/ISI plan, the repair/replacement plan, and the administrative, technical, and quality assurance programs/procedures required to implement the plan.

Pursuant to 10 CFR 50.55a, each construction permit, issued under 10 CFR Part 50, is subject to all the conditions in §50.55a in addition to those specified in §50.55. All the provisions of §50.55a that are applicable to holders of construction permits for nuclear power reactors also apply to holders of combined licenses issued under 10 CFR Part 52, except that combined license holders are not subject to the conditions of paragraphs (f) and (g) of §50.55a until after the Commission makes the finding under §52.103(g).

10 CFR 50.55a(g)(3)(i) and 10 CFR 50.55a(g)(3)(ii) both require that components are designed to provide access for inservice examination and that components meet the preservice inspection requirements set forth in the Code editions and addenda applied to the their construction. 10 CFR 50.55a(g)(3)(i) applies to ASME Code Class 1 components (including supports), and 10 CFR 50.55a(g)(3)(ii) applies to ASME Code Class 2 and 3 components (including supports for components that are classified as ASME Code Class 1, 2 and 3).

10 CFR 50.55a(g)(3)(v), states, "All components(including supports) may meet the requirements set forth in subsequent editions of codes and addenda or portions thereof which are incorporated by reference in paragraph (b) of this section {10 CFR 50.55a}, subject to the conditions therein. This provision allows the holder of a construction permit or combined license to use later editions and addenda of the code that are incorporated by reference in paragraph (b) of § 50.55a, for preservice inspection only, without the need for NRC approval or authorization.

02.01 General Records Review. Perform the following:

- a. Obtain and review at least three preservice NDE inspection records from each examination category of tables IWB-2500 (B-F through B-O, not addressed in 02.02), IWC-2500 (C-A through C-G), and IWD-2500 (D-A) of ASME Section XI. Ascertain whether the reported extent of examinations for those Class 1, 2, and 3 components and areas subject to examination meet the minimum examination requirements specified in the applicable **edition and** addenda of the ASME Code, Section **III or XI**.

**Guidance:** There are no limits placed on the maximum sample size. As such, the inspector is to use engineering judgment and knowledge of the plant design to determine a sample size that is appropriate to accomplish the inspection objective.

- b. Verify the selected records are consistent with the TRM/SDPM and **the** PSI program and contain or provide reference to the following:

**Guidance:** Use the following listing of required information as a "checklist" during the review of the selected sets of NDE records for completeness and technical adequacy. **Also verify that the actual examinations performed are consistent with what is prescribed in the FSAR.**

1. Examination results and data sheets;
2. Examination equipment data;
3. Calibration data sheets;

4. Examination evaluation data;
  5. Records on extent of examination;
  6. Records on deviation from program and procedures including justification for deviation;
  7. Records on disposition of findings. Evaluation of indications complies with the criteria of the NDE procedure and ASME Code Section III or XI;
  8. Re-examination data after repair work;
  9. Identification of NDE material such as penetrant, penetrant cleaner, couplant, films, tapes, etc;
  10. Following the disposition, acceptance or rejection, of findings by the NDE examiner (qualified NDE technician), evaluation of examination data is performed by a Level II or Level III examiner;
  11. Design and access provisions are sufficient to enable the performance of preservice examinations including the coverage specified by ASME Section III or XI;
  12. Incomplete examinations and results were repeated to permit full evaluation, if applicable; and
  13. Review by the ANII.
- c. For preservice inspections of components for which shop or field examinations serve as the preservice examinations in lieu of on-site preservice examinations, verify:
1. For vessels, the examination was performed after the hydrostatic test - which is required by the construction code - was completed.
  2. Examinations are conducted under conditions and with equipment and techniques equivalent to those expected to be employed for subsequent inservice examinations.
  3. Records are, or can be, documented and identified in a form consistent with the requirements in ASME Section XI, IWA-6000.

**Guidance:** Shop examinations are those performed in the component fabrication shop. Field examinations are those performed at a field facility or field location prior to the arrival of the component on-site. Once the component has been received on-site, then all examinations are considered to be “on-site” exams.

02.02 ASME Class 1 Records Review. Perform the following:

- a. Obtain and Review at least one site preservice NDE inspection record from each item number in examination categories B-A through B-D in tables IWB-2500, preservice NDE inspection records for one-half to one percent of the SG tubes (Category B-Q, pressurized water reactors (PWRs) only) and all dissimilar metal butt welds NPS 4 and larger in categories B-F and B-J.
- b. Verify that the following requirements are met:
  1. The method, extent, and technique of examination comply with ASME Section III or XI, the licensee's preservice inspection program requirements, and applicable NDE procedure.
  2. The examination data are within the acceptance criteria as outlined in the applicable NDE procedure and applicable Code requirements.
  3. The recording, evaluating, and dispositioning of findings are in compliance with the applicable NDE procedure and applicable Code requirements.
  4. The method used for NDE was sufficient to determine the full extent of indication or acceptance.

73757-03 RESOURCE ESTIMATE

Total resource estimate is between 400 and 500 hours, depending on the type of unit inspected, the type of construction materials used and the size of the unit.

Review of the general components under 02.01 would involve approximately 60 NDE reports. This is estimated to take approximately 200 hours

Review of the Class 1 components would involve approximately 30 NDE reports for a PWR (less for a boiling water reactor since there is no pressurizer or separate steam generator) plus the NDE reports associated with the dissimilar metal welds, which could be on the order of 12 to 36, depending upon the construction materials used. These reviews are anticipated to be more involved than those of 02.01. One-half to one percent of steam generator tubes could be as much as 350 tubes for a large 4 loop PWR. In total, these reviews are estimated to take between 200 hours to 300 hours.

73757-04 REFERENCES

ASME Code Section III, "Rules for Construction of Nuclear Facility Components."

ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."

EPRI Steam Generator Management Program - Pressurized Water Reactor Steam Generator Examination Guidelines. Revision 7, October 2007 (ADAMS Accession: ML080450582)

Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability - ASME Section XI Division 1."

10 CFR 50.55a, "Codes and Standards"

10 CFR 52.99, "Inspection During Construction"

73757-05      PROCEDURE COMPLETION

The goal of the inspections conducted in Sections 02.01 and 02.02 is to ensure that licensee has adequately implemented its PSI/ISI program by verifying that the records developed from its nondestructive examinations cover the scope of examination required by the ASME Code, the PSI program on file, and the regulations. Complete, clear, and reliable NDE data and records are essential when establishing a baseline for comparison with future inservice examinations. This procedure is considered complete when the appropriate number of NDE records have been reviewed.

END

Attachment 1: Revision History for IP 73757

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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	04/18/08 CN 08-012	Initial issue to support inspections of operational programs described in IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs.  Completed 4 year search of historical CNS, no commitments found.	None	ML070920429
N/A	ML13346A089 02/07/14 CN 14-005	Revised to update references to the regulations, update ASME and other references, and to make other editorial changes.	None	ML13346A088