

NRC INSPECTION MANUAL

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INSPECTION PROCEDURE 73052

INSERVICE INSPECTION - REVIEW OF PROCEDURES

PROGRAM APPLICABILITY: 2512, 2515 (BASIC)

73052-01 INSPECTION OBJECTIVE

Ascertain whether the licensee's procedures pertaining to the Preservice Inspection (PSI) and/or Inservice Inspection (ISI) adequately cover all required aspects of the approved ISI program.

73052-02 INSPECTION REQUIREMENTS

02.01 Program Requirements. Review the licensee's commitments in the SAR, Technical Specifications (TS), and approved ISI program. Ascertain that ISI procedures adequately cover all areas specified in the licensee's commitments for ISI and PSI requirements, where applicable.

02.02 Procedure Approval. Ascertain whether the ISI procedures have been approved by authorized licensee personnel and by the Authorized Nuclear Inservice Inspector (ANII).

02.03 Non-Destructive Examination (NDE) Procedure Review. The inspector should choose a sampling of procedures from each type of NDE, as appropriate, and review them for the following:

a. Scope.

1. Requirements are specified and agree with licensee's commitments in 02.01 above, including specified or referenced acceptance levels.
2. Qualifications of NDE personnel are specified and in accordance with the licensee's approved ISI program.
3. Methods of recording, evaluating, and dispositioning findings are established and reporting requirements are in compliance with applicable Code requirements. Records identified for retention should include:

(a) Examination results and data sheets

(b) Film and tape records, as applicable

- (c) Examination equipment data, including records of consumable materials such as penetrant materials, ultrasonic test (UT) couplants, etc.
 - (d) Calibration data sheets
 - (e) Calibration blocks, sheets, and tubes
4. If the licensee is using contractor personnel for all or part of the ISI effort, the procedures delineate the scope of work and division of responsibilities between the licensee and the contractor.

b. Technical Content.

- 1. Method of examination, extent, and technique is adequately described and in conformance with the requirements and guidance of ASME Code Section V.
- 2. Procedures include any special requirements imposed by joint NRC or industry initiatives, if applicable.
- 3. Methods to record and evaluate test results are specified.

02.04 Code Repair or Replacement Procedure Review. The inspector should choose one Code repair and one Code replacement procedure and review them to ensure that the elements of the procedures are consistent with the applicable requirements of the ASME Code and the approved ISI program.

a. Code Repair Procedure. Elements of a complete repair cycle that the licensee's procedure should include are:

- 1. Identification of the NDE method that revealed the flaw and the description of the flaw.
- 2. Description of the flaw removal method.
- 3. Procedure for weld and postweld heat treatment, if applicable, including review of procedures for welding prior to authorization of the repair and review of qualifications of welders performing the repair.
- 4. Provisions for using the services of an Authorized Inspection Agency when making a weld repair, as well as for having the ANI review and approve the repair procedure before its performance.
- 5. Description of the NDE program to be used after the repair is completed.
- 6. Delineation of the scope of work and division of responsibilities between the licensee and contractor, if a contractor is used.

- b. Code Replacement Procedure. Elements of a replacement program that the licensee's procedure should include are:
1. Provisions to verify that the replacements met the requirements of the edition of the Construction Code to which the original component/part was constructed, the provisions of later editions of that same Code, or Section III of the ASME Code.
 2. Provisions to ensure that the replacements ordered as spares met the requirements of the appropriate Construction Code used for the part/component it was intended to replace, the provisions of later editions of that Code, or Section III of the ASME Code.
 3. Justification, consistent with NRC guidelines, for not requiring a Code stamp.
 4. Evaluation of the suitability of the replacement prior to authorizing its installation.
 5. Retention of reports and records as required by the Construction Code and ASME Code Section XI.
 6. Performance of a PSI prior to the return to service of the replacement component or part in accordance with the applicable Code.

73052-03 INSPECTION GUIDANCE

General Guidance. Review of the licensee's procedures is to be conducted for the PSI of each unit and for the first ISI of each unit. Subsequent reviews shall be conducted each outage and should key only on revisions and newly implemented procedures.

This procedure covers ASME Section XI with the exception of those items in the PSI program that are covered in the Preoperational Test Program, Chapter 7000 of the IE Manual.

ASME Section V, "Nondestructive Examination, Subsection A - Nondestructive Methods of Examination," should be used as supplemental guidance during the conduct of this inspection procedure. However, the field of NDE is developing rapidly, causing NRC requirements, tailored to individual plants, to differ significantly from Section V of the ASME Code. In such cases, NRC requirements govern.

03.01 Specific Guidance.

- a. Inspection Requirement 02.01. The ISI program and program requirements differ for each facility. Each facility will have submitted an ISI plan to the NRC for review against the requirements of 10 CFR 50.55a(g). Often, relief will have been granted from certain requirements. Therefore, the ISI program requirements must be inspected against the TS and

commitments made by the specific facility in its NRC-reviewed ISI program.

- b. Inspection Requirement 02.02. According to ASME Code Section XI, it is the duty of the ANII to verify that the NDE are performed in accordance with written approved procedures by qualified personnel. This includes verifying the technical content and requirements of examination procedures and the procedures used to qualify NDE personnel.
- c. Inspection Requirement 02.03. At least one procedure from each type of NDE should be examined for technical adequacy. The inspector should be aware of NRC initiatives in the areas of procedure and personnel certification such as the NRC/EPRI/BWR Owners Group qualification requirements for intergranular stress corrosion cracking UT inspections. The following should be used for the review of each NDE procedure selected:
 1. Visual Examination. Use procedure review requirements from inspection procedure (IP) 57050 as a checklist for this review.
 2. Liquid Penetrant Examination. Use procedure review requirements from IP 57060 as a checklist for this review.
 3. Magnetic Particle Examination. Use procedure review requirements from IP 57070 as a checklist for this review.
 4. Ultrasonic Examination. Use procedure review requirements from IP 57080 as a checklist for this review, supplemented by any special requirements imposed by NRC/industry initiatives (i.e., Regulatory Guide (RG) 1.150).
 5. Radiographic Examination. Use procedure review requirements from IP 57090 as a checklist for this review.
 6. Eddy Current Examination. Review the licensee's procedure to ensure that the:
 - (a) Multi-channel examination unit is specified.
 - (b) Method of examination is described.
 - (c) Method of calibration and sequence of calibration is described.
 - (d) Requirements of TS or ASME Code Section XI (whichever is applicable) have been addressed.
 - (e) Procedures meet the requirements and intent of RG 1.83.

- (f) Licensee has written approval for use of Code cases such as "N-401".

Because the specific NDE technical requirements vary among Code editions and addenda, the inspector should ensure, when using the 57050 series IPs as technical requirements checklists, that the requirements reflect those specified in the Code of record committed to by the licensee being inspected.

- d. Inspection Requirement 02.04. If the inspector finds it necessary to conduct a more detailed inspection of the technical aspects of the process procedures used in the repair activity (i.e., welding, NDE), the 55050 and 57050 series IPs should be used. The inspector, however, should ensure that only the welding and NDE requirements of the Code section used in the repair (normally Section XI with referenced portions of Section III) are applied to the inspection of the process procedures. Additionally, the inspector should ensure that the licensee has evaluated all repair and replacement actions in accordance with 10 CFR 50.59 to ensure that there are no unresolved safety questions.

73052-04 REFERENCES

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

ASME Code Section V, "Nondestructive Examination."

ANSI N45.2.6, "Qualification of Inspection, Examination, and Testing Personnel."

Society for Nondestructive Testing, "Recommended Practice No. SNT-TC-1A."

Regulatory Guide 1.58, "Qualifications of Nuclear Power Plant Inspection, Examination, and Testing Personnel."

Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations."

Regulatory Guide 1.83, "Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes."

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

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