

NRC INSPECTION MANUAL

DRP

INSPECTION PROCEDURE 49055

REACTOR COOLANT PRESSURE BOUNDARY PIPING RECORD REVIEW

PROGRAM APPLICABILITY: 2512

49055-01 INSPECTION OBJECTIVES

01.01 To review a sample of reactor coolant pressure boundary piping records to determine whether:

- a. the licensee system for preparing, reviewing, and maintaining records is functioning properly;
- b. the selected records reflect work accomplished consistent with NRC requirements and SAR commitments; and
- c. the records indicate any potentially generic problems management control inadequacies or other weaknesses that could have safety significance.

Inspection Schedule

<u>Inspection</u>	<u>May Be Started</u>	<u>Must Be Started</u>	<u>Must Be</u>
First Inspection	After work is	-----	Before work is
Second Inspection	After work is	Before work is	280 + 1 mos.

49055-02 INSPECTION REQUIREMENTS

02.01 Review the pertinent quality related records of three parts (e.g., pipe spools, fittings bellows) in the reactor coolant pressure boundary piping system. Select no more than two components of any one size and include at least two of the systems listed in Section 03 of IE 49053. Determine who prepares each record and, most important who is required to review the records for accuracy and for assessing that the recorded information meets requirements. Review records relating to the following:

- a. Receipt Inspection and Material Certification

- (1) Records confirm that required material characteristics, performance tests, environmental qualification tests, nondestructive tests, and other specification requirements were met.

- (2) Original records or certification system met requirements of applicable criteria.

b. Installation Inspections

- (1) Records confirm that the selected components were installed as specified.
- (2) Records confirm that the required inspections were performed.
- (3) Records confirm that the required protection was provided after installation.

02.02 Review the licensee/contractor system for reporting and dispositioning nonconforming materials, parts and components associated with reactor coolant pressure boundary piping to determine whether:

- a. the records adequately document current status of nonconformance and deviations. Review approximately 10 nonconformance/deviation reports to sample system effectiveness.
- b. the sample of records is legible and complete, and indicates reports are promptly reviewed by qualified personnel.
- c. the records are routinely being processed through established channels for resolution of the immediate problem as well as generic implications.
- d. the records are being properly identified and stored, and can be retrieved in a reasonable time.
- e. nonconformance reports include the status of corrective action or resolution and action to prevent recurrence.

02.03 To determine whether qualified licensee/contractor craft and inspection personnel are being employed on reactor coolant pressure boundary piping installation work, review a sampling (4 to 6 but no more than 10 records total) covering several different disciplines of personnel qualification records as follows:

- a. Determine whether a system of personnel qualification records, meeting stated requirements, exists and is being maintained in current status.
- b. Determine if the records are sufficient to reasonably support qualification in terms of applicable certification, experience, proficiency, training, testing, etc., and if there is a method for verifying the accuracy of the information.
- c. Review the action taken by responsible licensee/contractor organizations to independently authenticate the record material.

02.04 Review relevant portions of licensee/contractor audit reports concerning the installation of reactor coolant pressure boundary piping. Review 2 to 4 reports to determine whether:

- a. the required audits have been performed in accordance with the schedule and functional areas in established audit plans.
- b. audit findings have been reported in sufficient detail to permit a meaningful assessment by those responsible for corrective action, final disposition, and trending.
- c. the licensee/contractor has taken proper followup action on those matters in need of correction and action to prevent recurrence.
- d. There are trends indicating inadequate corrective actions.

¹02.05 Expand the sample size to include additional reactor coolant pressure boundary systems or QA records. Conduct selected portions of the records review required by Sections 02.01 thru 02.04.

49055-03 INSPECTION GUIDANCE

03.01 Due to the importance and extent of reactor coolant pressure boundary piping, this procedure is conducted twice. The intent of this procedure is to review pertinent records during the early stages of piping work and conduct an additional inspection when work is about two-thirds complete.

03.02 Applicable portions of the SAR should be reviewed to determine licensee documentation commitments relative to construction and inspection requirements prior to inspection in this area. The inspector should make this determination during inspection preparation.

03.03 For clarification, "Material Test Report" is a generic expression meaning a report of test results to confirm that material, chemical and physical properties are consistent with the applicable specification. Vendor terms used, which can be identified with the expression "Material Test Report," include:

Ladle analysis (sample of molten metal)

Check analysis (sample of solidified metal)

CTR (Chemical Test Report or Certified Test Report)

MTR (Material Test Report - usually includes chemical and physical tests)

¹ This requirement shall also be conducted if the licensee's performance is categorized by the SALP program as Category 3, or if Regional management at the Division Director level concludes that recent findings will likely result in a Category 3 rating during the next SALP evaluation unless immediate action is taken.

03.04 The generic terms CTR and MTR should not be confused with the term "Certification." A "Certification" is a document issued in lieu of actual quality documentation records stating that the quality requirements contained in specifications and purchase orders have been met.

03.05 "Quality Release Form" and "Certificate of Equipment" are examples of generic designations for forms used by NSSS manufacturers to serve as certifications of quality (in lieu of original quality documentation) for components and equipment manufactured by, or for, the NSSS manufacturer.

03.06 This procedure pertains to records of all reactor coolant and pressure boundary piping activities at the site except welding and nondestructive (NDE); i.e., records of receipt, receipt inspection, identification, protection, testing, and inspection.

03.07 The inspector should bear in mind that NRC's sample covers only a very small portion of the records involved. Thus, substantive errors or departure from requirements raise the issue of whether the licensee is adequately controlling the process.

03.08 Specific Guidance

Note: The guidance below refers to a specific subsection of 02, above.

02.01a Compare the material test report/certification values with the specified requirements of ASME Boiler and Pressure Vessel (B&PV) Code, Section III, and applicable ASTM specifications. For material requiring impact testing, compare the test values against those specified in the ASME B&PV Code, Section III. Ensure that tests are performed at the required test temperatures and results are satisfactory.

49055-04 REFERENCES

SAR, Chapters 1, 3, 5, 7 and 17, including pertinent codes and standards referenced in these chapters.

Regulatory Guide 1.26, "Quality Group Classification"

Regulatory Guide 1.28, "Quality Assurance Program Requirements (Design and Construction)"

Regulatory Guide 1.38, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items of Water-Cooled Nuclear Power Plants"

Regulatory Guide 1.88, "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Record"

American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section II, III, V, IX and XI (ASME - B&PV Section III)

American Society for Testing Materials (ASTM)

American Society for Nondestructive Testing, Supplement A, B, C of
D (SNT-TC-1A)

USA Standard Code for Pressure Piping "Nuclear Power Piping"
(USAS-B31.7 or ANSI B31.7)

ANSI N45.2.9, "Collection, Storage and Maintenance of Quality
Assurance Records"

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