

NRC INSPECTION MANUAL

DQASIP

INSPECTION PROCEDURE 53053

CONTAINMENT PENETRATIONS (MECHANICAL) WORK OBSERVATION

PROGRAM APPLICABILITY: 2512

53053-01 INSPECTION OBJECTIVES

01.01 By direct observation and independent evaluation of work performance, work in progress, and completed work, ascertain whether activities relative to containment penetrations are being accomplished in accordance with NRC requirements and SAR commitments.

01.02 Determine whether inadequacies in work or work activities associated with containment penetrations may indicate any potential generic problems.

Inspection Schedule

<u>Inspection</u>	<u>May Be Started</u>	<u>Must Be Started</u>	<u>Must Be</u>
First inspection	After work is 20% complete	Before work is 40% complete	Before work is 60% complete
Semi-Annually		At start of installation	-----

53053-02 INSPECTION REQUIREMENTS

02.01 First Inspection Requirements. Select two containment penetrations (one piping and an access penetration) and by observation of work performance, partially completed work, and/or completed work, as appropriate, determine whether the requirements of applicable specifications, standards, work procedures, testing procedures, and inspection (QC) procedures are being met, as follows:

NOTE: Attempt to select one piping penetration that is a multi-bellows high energy line with a guard pipe, if possible.

- a. Penetration components/assemblies and installed material meet purchase specifications.
- b. Method of assembly of components is consistent with design drawings and work specifications.

- c. Measures exist and are in force to protect installed penetrations from construction debris, physical damage, and hostile environments.
- d. Installation activities are being conducted with reference to specified procedures and by qualified personnel where required.
- e. Nondestructive examination (NDE) is being performed in accordance with procedures, and examination personnel are qualified.
- f. Inspection (QC) activities are being performed as required by proper procedures and by properly qualified personnel.

02.02 Semi-Annual Inspection Requirements

- a. Every six months, during the time containment penetration installation activities are in progress, select three documents (construction specifications, drawings, work procedures, etc.) being used for penetration installation and related work (e.g., testing, NDE, inspection). For each of the three documents determine whether the documents are technically adequate, current, and properly approved.
- b. Every six months, during the time containment penetration installation activities are in progress, select one or two penetration/penetration assemblies for inspection (a minimum of one access and three piping penetrations shall be inspected to the requirements of this procedure). By observation of work performance, partially completed work, and completed work, determine whether requirements of work procedures, testing procedures, and inspection procedures set forth in Section 02.01, items a through f above, are being met.

02.03 Additional Inspection. Additional inspections, as determined by Regional management, may be conducted in the inspection areas covered above when the licensee's performance in this area is classified as Category 3 by the SALP program, or if Regional management concludes that recent findings will likely result in a SALP Category 3 rating. In these cases, particular consideration should be given to an expanded sample of items to be inspected under Sections 02.01 and 02.02 above.

53053-03 INSPECTION GUIDANCE

General Guidance

- a. Pertinent portions of the applicable specifications, work procedures, and inspection requirements should be reviewed prior to observing activities in this area at the construction site.
- b. Duration of penetration activities will vary at different construction sites. Consequently it may not be possible to complete all inspection requirements in Section 02 during one site inspection. Moreover, the inspector may not be able to observe all facets of all activities identified in Section 02 of this procedure. Direct observation, on a selective basis, of activities important to safety should be made.
- c. Findings from this inspection activity should address each element as being satisfactory, being unresolved and requiring resolution, or being in violation and requiring correction. When significant inadequacies are identified indicating weakness within the responsible organization, the inspector should inform cognizant regional supervision. The issue should be addressed at the appropriate level of licensee management.

03.01 Specific Guidance

Inspection Requirement 02.02. The procedure for Section 02.02 should be initiated when penetration activities commence, and periodic inspections should continue as long as there is sufficient work in progress to warrant inspection. The penetration/penetration assemblies selected for Section 02.02 should, to the extent possible, include different contractors, different types of penetrations, and should reflect the importance of the penetration to operational safety. Penetrations selected for inspection for semi-annual check should not duplicate those selected for Section 02.01.

03.02 Prevalent Errors/Concerns. The inspector should be alert to prior experiences with problems in the following areas.

- a. Welding procedures for penetration assembly are in violation of the maximum temperature to which the seal could be exposed.
- b. Penetrations are adequately protected from construction debris during installation and post-installation phase.
- c. QC inspectors are qualified to perform NDE for visual and liquid penetrant inspections.
- d. Material certifications are inadequate to verify that appropriate materials, test data and documentation have been supplied.
- e. Documented evidence that prototype models and production models are essentially replicate is not available.
- f. Documentation that penetrations meet environmental qualifications is not adequate.
- g. Post-installation leak tests are satisfactorily performed.
- h. Penetration assemblies are properly positioned and aligned during installation.
- i. Penetrations are properly handled during installation phase to preclude damage.

53053-04 REFERENCES

Applicable portions of the SAR and SER, including pertinent codes and standards referenced in these chapters of the SAR

Section 03 of Inspection Procedure 55050

Section 03 of Inspection Procedure 55100

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

Regulatory Guide 1.58, Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel

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