

Activity: Equipment History

1.0 **Purpose:** This guideline provides a method to observe and evaluate the equipment history activities conducted in support of nuclear plants.

2.0 **Scope:** This guideline has been developed for use in the review and evaluation of equipment history conducted in support of nuclear plants having operating licenses.

NOTE: The commercial operating date for each generating unit is the data start date and the inservice date for the unit systems and components. An exception is when a component is replaced. For replaced components, the data start date and the inservice date for the replacement component will be one day after the component is replaced.

 This guideline may not apply to the Class 1E failure and trending data program activities if a separate program is in effect for environmental qualification.

3.0 **References:**

- 3.1 ANSI N45.2.9-1974
- 3.2 ANSI N18.7
- 3.3 ASME B&PV Code Section XI
- 3.4 Reg. Guide 1.33 and 1.88
- 3.5 INPO Good Practice MA-302
- 3.6 INPO Good Practice MA-310

3.7 NRC Inspection Procedure 62700

4.0 Guidelines:

4.1 In preparation for and during the conduct of this surveillance:

Obtain and review implementing procedures, instructions and drawings governing this activity.

Prepare a guide or checklist using the selected items from this guideline.

Review past surveys, audits, surveillances and other evaluations/assessments.

Ensure that checklists include, where applicable, actual observations of performance, general plant conditions, radiological work practices, housekeeping, work document controls and use, and safety practices.

NOTE: Refer to Guideline A.1, "General Quality Surveillance Guidance," for specific details on the attributes listed above.

4.2 Using the latest reviewed and approved plans and instructions, it is recommended that the evaluator prepare a surveillance checklist or other appropriate documentation of the requirements therein for use in the evaluation of the program implementation. Other appropriate requirements, such as those contained in instruction letters, etc., are also to be considered for use in the evaluation.

NOTE: Observation of real-time activities is emphasized and desired for surveillance. Specific situations, wherein the individual is experienced and knowledgeable in the area, may occur where completion of the checklist is performed after the

observation.

- 4.3 Identify and review any NRC and audit program findings and previous surveillance reports relative to equipment history and include significant historical problems and open items in the evaluation documentation for verification of progress toward corrective action completion.
- 4.4 Verify that the initial installation of the maintenance history file has been completed.
- 4.5 Review the records associated with selected maintenance activities to determine whether corrective and preventive maintenance records are assembled, stored, and retrievable as part of the maintenance history.

NOTE: Machinery history records are not identified in ANSI N45.2.9 as permanent quality records. Plant technical specifications may further alter the ANSI record keeping requirements. Therefore, permanent storage may not be a regulatory requirement. The requirements for developing and maintaining maintenance records are discussed in Section 6 of the Technical Specifications, ANSI N18.7, and ANSI N45-2.9.

- 4.6 Verify that maintenance history is available to support maintenance activities and optimize equipment performance. The following items should be considered.
 - A. Maintenance history records are maintained for major systems, equipment, and components including entries made prior to operational turnover. (e.g., construction and startup repairs are documented)
 - B. The component identification and description contains the ID number;

manufacturers name, model and serial number; quality classification and purchase order number.

- C. Performance-related information derived from startup tests, predictive and preventive maintenance, surveillance tests, post-work testing, and other diagnostic testing are effectively documented.
- D. Malfunctions, repairs, modifications, inspection/test results are effectively documented.
- E. Maintenance history records are readily accessible.
- F. Maintenance history records and Nuclear Plant Reliability Data System (NPRDS) information are appropriately considered in planning for corrective maintenance, modifications, and preventive maintenance.
- G. Maintain an engineering file on industry experience and provide for engineering review and analysis. (e.g., Licensee Event Reports, NPRDS, etc.).

NOTE: If repetitive or generic failures have been identified, verify that appropriate corrective actions have been or will be taken.

- H. Vendor correspondence including factory tests and inspections results are included in the history records.

4.7 Interview responsible plant management and determine if component data is being utilized for any of the following beneficial uses.

- A. Maintenance planning and repair activities.
- B. Spare parts decisions.

- C. Prompt location of similar equipment at other utilities.
- D. More accurate assessment and improved reliability of nuclear plant safety systems.
- E. Evaluation and adjustment of surveillance instructions.
- F. Identification of failure trends and detection of wear-out patterns.
- G. Statistics supplied to manufacturers on product performance.

NOTE: Interview results should be evaluated and recommendations concerning program utilization offered, if appropriate.

5.0 Other Guidelines for Consideration:

- 5.1 A.1, "General Quality Surveillance Guidance"
- 5.2 F.2, "Environmental Qualification"
- 5.3 L.3, "Corrective Maintenance"
- 5.4 L.11, "Predictive Maintenance"
- 5.5 L.12, "Preventive Maintenance"