

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

May 22, 1985

IE INFORMATION NOTICE NO. 85-39: AUDITABILITY OF ELECTRICAL EQUIPMENT
QUALIFICATION RECORDS AT LICENSEES'
FACILITIES

Addressees:

All holders of a nuclear power reactor operating license (OL) or a construction permit (CP).

Purpose:

This information notice is being issued to alert licensees of deficiencies in the implementation of 10 CFR 50.49 requirements at operating facilities. These deficiencies were identified during recent NRC inspections and relate to the review and approval of qualification documents by licensees and auditability of qualification files.

It is suggested that recipients review this notice for generic applicability to ensure that their equipment files contain adequate and auditable documentation to support environmental qualification requirements. Suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or response is required.

Description of Circumstances:

On May 23, 1980, the NRC issued Memorandum and Order CLI-80-21 specifying that all holders of a nuclear power reactor OL or CP must meet the requirements set forth in Division of Operating Reactors (DOR) guidelines and NUREG-0588.

In mid-1981, the NRC issued Safety Evaluation Reports (SERs) on environmental qualification of safety-related electrical equipment to licensees of all operating plants. Where additional qualification information was required, licensees were directed to respond to the NRC within 90 days of receipt of the SER. With technical support from the Franklin Research Center (FRC), the NRC staff reviewed licensees' submittals and published the results in Technical Evaluation Reports (TERs). These TERs became part of the new SERs for each of the 71 operating plants that the staff reviewed. Subsequently, licensees responded with commitments to correct specific deficiencies identified in the TERs and schedules of completion dates to meet the qualification deadline required by 10 CFR 50.49.

The staff has conducted a number of inspections at licensees' facilities to review licensee implementation of 10 CFR 50.49 requirements and to verify that TER corrective action commitments are being properly implemented. These inspections have identified deficiencies in the contents and auditability of document files used to support equipment qualification. Specific examples follow:

1. Equipment qualification (EQ) files contained no indication that the documentation contained in these files had been reviewed by the licensee or that the licensee had determined the equipment to be qualified.
2. Handwritten material used to support qualification was not signed or dated and showed no indication that this material had been verified or approved.
3. The required postaccident operating time for equipment was not correlated to qualified life as established in the test report.
4. The qualification of replacement equipment was not upgraded as required by 10 CFR 50.49. Qualification of some replacement equipment was based on previously allowed DOR guidelines that stated "equipment is considered qualified for main steam line break (MSLB) environmental conditions if it was qualified for a loss-of-coolant accident (LOCA) environment in plants with automatic spray systems not subject to disabling single component failures." This basis of qualification is not acceptable without additional justification for replacement equipment was procured and installed after February 22, 1983.
5. The applicability of generic communications such as vendor technical letters, Part 21 reports, and NRC information notices and bulletins affecting qualification and performance of specific equipment were not considered in establishing and maintaining the qualified status of the equipment.
6. Certain documents used to support qualification (procurement documents, test reports, certificates of conformance, vendor correspondence, etc.) were not contained in the files nor did the files reference where these documents could be found.
7. Some reports discussed test anomalies and modifications to equipment during testing but the licensee had not provided evaluations or analyses to assess the applicability of this information to the qualification of the installed equipment.

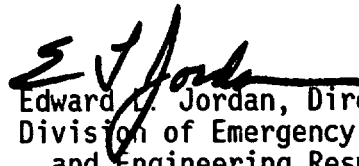
Discussion:

Licensees and permit holders are responsible for the adequacy and completeness of documents and for the EQ review process used to support the qualification of safety-related equipment at their facilities. Paragraph (j) of 10 CFR 50.49 states that a record of qualification, including documentation in paragraph (d) of the regulation, must be maintained in an auditable form for the entire period

during which the covered item is installed in the nuclear power plant or is stored for future use. Section 3 of IEEE-323-1971 and 1974 defines auditable data as information that is documented and organized so as to be readily understandable and traceable to permit independent verification of inferences or conclusions based on the information.

An EQ test report, in and of itself, does not completely support a determination that equipment is qualified. In order to ensure that plant-specific requirements are adequately considered, the following types of additional information may be needed: (1) required postaccident operating time compared to the duration of time the equipment has been demonstrated to be qualified; (2) similarity of tested equipment to that installed in the plant (e.g., insulation class, materials of components of the equipment, and tested configuration); (3) evaluations of the adequacy of test conditions, aging calculations for qualified life, and replacement interval determination; (4) effects of decreases in insulation resistance on equipment performance; (5) evaluations of test anomalies; and (6) applicability of EQ problems reported in IE information notices and bulletins and their resolution.

No specific action or written response is required by this notice. If you have any questions concerning this notice, please contact the Regional Administrator of the appropriate NRC regional office or this office.



Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

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Attachment: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED
 IE INFORMATION NOTICES

| Information Notice No. | Subject | Date of Issue | Issued to |
|------------------------|---|---------------|---|
| 85-38 | Loose Parts Obstruct Control Rod Drive Mechanism | 5/21/85 | All PWR facilities designed by B&W holding an OL or CP |
| 85-37 | Chemical Cleaning Of Steam Generator At Milestone 2 | 5/14/85 | All pressure water reactor facilities holding an OL or CP |
| 84-55 Sup. 1 | Seal Table Leaks At PWRs | 5/14/85 | All power reactor facilities holding an OL or CP |
| 85-20 Sup. 1 | Motor-Operated Valve Failures Due To Hammering Effect | 5/14/85 | All power reactor facilities holding an OL or CP |
| 85-36 | Malfunction Of A Dry-Storage, Panoramic, Gamma Exposure Irradiator | 5/9/85 | All licensees possessing gamma irradiators |
| 84-52 Sup. 1 | Inadequate Material Procurement Controls On The Part Of Licensees And Vendors | 5/8/85 | All power reactor facilities holding an OL or CP |
| 85-35 | Failure Of Air Check Valves To Seat | 4/30/85 | All power reactor facilities holding an OL or CP |
| 85-34 | Heat Tracing Contributes To Corrosion Failure Of Stainless Steel Piping | 4/30/85 | All power reactor facilities holding an OL or CP |
| 84-84 Rev. 1 | Deficiencies In Ferro-Resonant Transformers | 4/24/85 | All power reactor facilities holding an OL or CP |
| 85-33 | Undersized Nozzle-To-Shell Welded Joints In Tanks And Heat Exchangers Constructed Under The Rules Of The ASME Boiler And Pressure Vessel Code | 4/22/85 | All power reactor facilities holding an OL or CP |

OL = Operating License
 CP = Construction Permit