



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

50-390/391

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FEB 21 1980

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TO OPERATING LICENSE APPLICANTS

Gentlemen:

SUBJECT: QUALIFICATION OF SAFETY-RELATED ELECTRICAL EQUIPMENT

To ensure the adequacy of electrical equipment environmental qualification programs for those nuclear power plants required to satisfy the requirements set forth in the 1971 or 1974 version of IEEE Std. 323, the staff has developed additional guidance set forth in NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment". A "For Comment" copy of this document was mailed to you on January 9, 1980. Our letter of February 5, 1980, noted the issuance of NUREG-0588 and described the staff plans to implement NUREG-0588 and IEEE Std. 323-1974.

Prior to the completion of our review of your application, it is necessary that we establish that you conform to the staff position or that you have used other equally acceptable methods. To assist us in that effort, you are requested to review your equipment qualification documentation (exclusive of seismic qualification considerations which are being addressed separately) for each item of safety-related electrical equipment to identify the degree to which your qualification program complies with the staff's position described in NUREG-0588. Where there are deviations, you should provide the basis for concluding that your program demonstrates the item in question is qualified for its service conditions. Should you conclude that your qualification program does not adequately demonstrate that an item is qualified for its service conditions, that item should be requalified in accordance with the position described in NUREG-0588 and the implementation guidance provided to you in our letter dated February 5, 1980.

You should document, in a separate report or in your FSAR, the results of your review for each item of safety-related electrical equipment. As a part of this documentation, you are requested to provide a tabular listing of all such equipment and appropriate qualification-related data for each item in accordance with the enclosure, "Example Table - Environmental Qualification of Electrical Equipment". This table should include all equipment located both inside and outside containment, including balance-of-plant equipment and equipment supplied by your nuclear steam system supplier. This table will assist us in our audit of your qualification review documentation.

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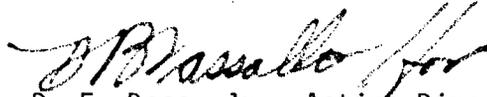
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We expect to resolve comments on NUREG-0588 and issue the staff position in effective form by April 1980. While we do not anticipate that major changes will be made in NUREG-0588 as a result of the comment process, we will inform you of any modifications we plan to make as soon as they are identified.

Please advise us of your schedule for completing this review

Sincerely,



D. F. Ross, Jr., Acting Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: Service List

EXAMPLE TABLE
ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT (10)

Type of Equipment/ Location (1)	Manufacturer	Model No. or Identification No. (2)	Abnormal or Accident Environment (3)	Environment to Which Qualified (4)	Operability Requirements (5)	Operability Demonstrated (6)	Accuracy or Response Time Requirements (7)	Accuracy or Response Time Demonstrated (8)	Qualification Report & Method (9)
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- (1) For ICE condenser containments, specify upper or lower compartment.
- (2) Model or identification number should be adequate to define specific equipment identity (do not provide plant specific tag item number).
- (3) Temperature and pressure as a function of time, time interval for containment sprays, and total integrated radiation dose for equipment location. Include submergence test if applicable. Reference may be made to figures in the FSAR or other docketed material for pressure and temperature envelope. All other requested information should be listed in this table.
- (4) Temperature and pressure, as a function of time, time interval containment sprays simulated, and total integrated radiation dose for which equipment was qualified. If the same piece of equipment was not subjected to all environmental conditions, describe separate effects testing and justify. Include submergence test if applicable. Reference may be made to figures in the FSAR or other docketed material for qualification envelopes or actual test conditions for pressure and temperature conditions. All other information requested should be listed in this table.
- (5) Time that equipment is required to operate during and subsequent to a design basis event consistent with the plant safety analysis. Distinguish between short term (e.g. trip functions) and long term functional requirements (e.g. post accident monitoring) if the requirements for accuracy or response time differ for these functions.
- (6) Time that equipment operability was demonstrated by qualification method. Distinguish between short term and long term functional requirements as noted under Operability Requirements.
- (7) Provide the accuracy requirements for sensors and transmitters for trip functions and post accident monitoring as used in the plant safety analysis. Note applicability of each if they differ. Provide the response time requirements for equipment that initiate protective actions as used in the plant safety analysis.
- (8) Accuracy for sensors and transmitters or response times of equipment should distinguish between short term (e.g. trip functions) and long term (e.g. post accident monitoring) if the requirements differ for these functions.
- (9) Method should indicate test, analysis or combination as applicable. If qualification considered aging include in this column the qualified life and accelerated aging time and temperature conditions used.
- (10) For equipment located outside containment which has not been qualified to abnormal environmental conditions, provide the environmental design requirements for this equipment and note as such in column 5. For each area of the plant where such equipment is located provide the normal operating extremes in environmental conditions and note as such in column 4. By footnote, provide the basis that the normal operating extremes in environmental conditions will not be exceeded for each area. This basis should include the quality of environmental control systems, their redundancy, sources of power and cooling, and the operating requirements to maintain suitable environmental conditions during all modes of plant operation. The monitoring of environmental conditions in these areas and of the equipment controlling such environments to provide assurance that such conditions are maintained, should also be addressed.

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