

April 9, 1992

Docket Nos. 50-390  
and 50-391

Tennessee Valley Authority  
ATTN: Dr. Mark O. Medford, Vice President  
Nuclear Assurance, Licensing & Fuels  
3B Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

Dear Dr. Medford:

SUBJECT: WATTS BAR NUCLEAR PLANT - SPECIAL PROGRAM ON MECHANICAL  
EQUIPMENT QUALIFICATION (TAC M76974)

In the working meeting to address environmental qualification (EQ) issues on March 5, 1992, we committed to provide guidelines on the information needed for environmental qualification of mechanical equipment (MEQ). The enclosure to this letter provides the guidance prepared by the NRR Plant Systems Branch.

As we stated in the meeting, MEQ review is done in conjunction with the staff's EQ review, currently ongoing. The submittal schedule of the Watts Bar MEQ information will be discussed in the next licensing status meeting. Upon receipt and initial review of TVA's MEQ submittal, we will develop a review schedule.

Sincerely,

Original signed by

Peter S. Tam, Senior Project Manager  
Project Directorate II-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
Guidance for MEQ submittal

cc w/enclosure:  
See next page

MAY

OFC	PDII-4/LA	PDII-4/PM	SPLB	SPLB	SPLB <i>elz</i>	PDII-4/D
NAME	MSanders <i>ms</i>	PTam:dw <i>PT</i>	<i>HW</i> Walker	JLyons <i>JL</i>	CMcCracken	FHebdon <i>FH</i>
DATE	4/8/92	4/8/92	4/8/92	4/8/92	4/8/92	4/9/92

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Watts Bar Nuclear Plant

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ATTN: Dr. Mark O. Medford

cc:

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Dayton, Tennessee 37321

The Honorable Johnny Powell  
County Judge  
Meigs County Courthouse  
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Regional Administrator  
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Enclosure

GUIDANCE FOR SUBMITTAL ON SAFETY-RELATED  
MECHANICAL EQUIPMENT QUALIFICATION (MEQ) IN A HARSH ENVIRONMENT

Although there are no detailed requirements for mechanical equipment qualification (MEQ), GDC 1, "Quality Standards and Records", GDC 4 "Environmental and Missile Design Bases", and Appendix B to 10 CFR 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" (Section III, "Design Control", and XVII, "Quality Assurance Records"), contain the following requirements related to equipment qualification:

- o Components shall be designed to be compatible with the postulated environmental conditions, including those associated with LOCAs.
- o Measures shall be established for the selection and review for suitability of application of materials, parts, and equipment that are essential to safety-rated functions.
- o Design control measures shall be established for verifying the adequacy of design.
- o Equipment qualification records shall be maintained and shall include the results of tests and material analyses.

For mechanical equipment, the staff review will concentrate on materials (e.g., seals, gaskets, lubricants, fluids for hydraulic systems, diaphragms etc.) which are sensitive to environmental effects. A review and evaluation should be performed by the applicant that includes the following:

- (1) Identification of safety-related mechanical equipment located in harsh environmental areas, including required operating time.
- (2) Identification of non-metallic subcomponents of this equipment.
- (3) Identification of the environmental conditions this equipment must be qualified for. The environments defined in the electrical equipment program are also applicable to mechanical equipment.
- (4) Identification of non-metallic material capabilities.
- (5) Evaluation of environmental effects.

The list of equipment identified should be submitted. From this list, the staff will select approximately three items of mechanical equipment for which documentation of their environmental qualification should be provided for review. The results of the review of all mechanical equipment in harsh environmental areas should also be provided.