



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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September 24, 1998

50-498/499

MEMORANDUM TO: PD IV-1 File

FROM:

*HA* Tom Alexion  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

SUBJECT:

LICENSEE'S 10 CFR 50.59 EVALUATION OF ELIMINATION OF ENVIRONMENTAL QUALIFICATION OF MECHANICAL COMPONENTS, SOUTH TEXAS PROJECT, UNITS 1 AND 2 (STP) (TAC NOS. M98912 AND M98913)

By letter dated December 17, 1996, the licensee provided its 10 CFR 50.59 Summary Report. Based on my review of the Summary Report, Unreviewed Safety Question Evaluation (USQE) 95-044, titled "Elimination of the Environmental Qualification of the Mechanical Components at STP," was selected for further review by the Office of Nuclear Reactor Regulation (NRR) technical staff. In addition, on May 6, 1998, the licensee provided additional information in response to NRC questions. The reviewer was Vonna Ordaz, Plant Systems Branch, Division of Systems Safety and Analysis. During the review, the Plant Systems Branch consulted with the Electrical Engineering Branch, Division of Engineering.

In USQE 95-044, the licensee evaluates the elimination of the environmental qualification of mechanical components from the Updated Final Safety Analysis Report (UFSAR) for STP. The licensee concluded that this does not constitute an unreviewed safety question (USQ) as defined by 10 CFR 50.59

10 CFR Part 50, Appendix A, General Design Criterion-4 (GDC-4), "Environmental and Dynamic Effects Design Bases," states in part, that components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with postulated accidents, including loss-of-coolant accidents. The Mechanical Environmental Qualification (MEQ) Program at STP was designed to comply with GDC-4 by verifying the ability of the mechanical equipment to perform its required safety functions when exposed to postulated environments. The program was maintained in an MEQ database and it included evaluations of safety-related mechanical equipment. The licensee evaluated the information in the MEQ database and determined that it was redundant with currently existing programs at STP. Accordingly, for the proposed UFSAR change, the licensee determined that the evaluations documented in the MEQ database would no longer be utilized to justify compliance with GDC-4 for safety-related mechanical components. Instead, compliance with GDC-4 would be maintained through the STP Procurement, Maintenance and Surveillance Programs.

Under the Procurement Program at STP, the licensee establishes compliance with GDC-4 through the evaluation of non-metallic parts in mechanical components based on the Fit, Form and Function methodology used in the Item Equivalency Evaluation and the Commercial Grade

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Dedication Process. The Maintenance Program at STP includes maintenance, surveillance and periodic testing of mechanical equipment in accordance with Regulatory Guide 1.33, "Quality Assurance Program Requirements." Under the Maintenance Program, routine monitoring of mechanical equipment is performed to identify and prevent significant age-related degradation of non-metallic parts. The program also verifies whether the safety function of the mechanical equipment is maintained in normal, abnormal and accident environments. The licensee stated that the Procurement, Maintenance and Surveillance Programs provide reasonable assurance and take necessary corrective actions to maintain the equipment in its best operating condition based on documentation, which includes vendor certification (Certificates of Compliance), design and purchase specifications for replacement parts, and material evaluations for replacement parts.

In order to verify the effectiveness of these programs for maintaining compliance with GDC-4, the program data and records are reviewed periodically in accordance with the ASME Section XI testing to ensure that the equipment has not suffered any degradation which may include the effects of thermal, radiation and/or cyclic aging. In USQE 95-0044, the licensee stated that the elimination of the MEQ program would not impact the safety or intended functions of the affected equipment and that no USQ exists.

Based on its review, the NRC staff found that the proposed change to the UFSAR to eliminate the MEQ Program would not alter any plant system, structure or component. The staff compared the proposed UFSAR change to Standard Review Plan 3.11, "Environmental Qualification of Mechanical and Electrical Equipment," and found that it met the acceptance criteria of the guidance. The staff concluded that maintaining compliance with GDC-4 through the Procurement, Maintenance and Surveillance Programs at STP would be acceptable, and that no USQ exists.

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