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February 25, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: McGuire Nuclear Station
Docket Nos. 50-369, 50-370

Dear Mr. Denton:

The attachment provides information related to items 27 and 39 in the NRC/FRC Technical Evaluation Report (TER) Category II.B. As explained in the attachment, Duke Power has determined that the environmental qualification concerns identified do not represent a safety concern for operation of McGuire Units 1 and 2.

Very truly yours,

H.B. Tucker

Hal B. Tucker

REH:jfw
Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Senior Resident Inspector
McGuire Nuclear Station

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MCGUIRE NUCLEAR STATION

ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT

EVALUATION OF NRC/FRC TECHNICAL EVALUATION REPORT SECTION II.B

The NRC/FRC Technical Evaluation Report (TER) concerning environmental qualification of electrical equipment identifies two equipment items in Category II.B, Equipment Not Qualified. Duke Power Company has reviewed the two equipment items in this category and provides the following discussion for each item.

NRC/FRC Equipment Item 27 - Rotork Model NA-2 Valve Actuators Located Outside Containment

Statement of Problem: Following exposure to 212°F steam environment for 200 hours, the torque switch mechanism in the Rotork NA-2 style actuator failed resulting in the motor running to stall and burning up following the actuation of a valve in the close direction. Reference Rotork Test Report TR-3025.

Background Information: The torque switch mechanism of the NA-2 actuator was the item which failed as reported in TR-3025. The NA-2 torque switch mechanism (helix) is made of a thermoplastic material, nilotron, which at approximately 180°F becomes pliable resulting in failure to actuate the torque switch at the end of valve stroke. It should be noted that this type failure will occur only after the valve has reached its safety position and will not affect the valve's ability to remain in its safety position. Additionally, Duke has analyzed all NA-2 applications and has determined that once the actuator has reached its safety position, no additional operation is required. Further, all NA-2 actuators at McGuire are located outside containment in the auxiliary building and access is possible following a HELB accident, thus allowing for manual operation (by handwheel), if needed in the long term.

Analysis: Based on the Rotork NA-2 test report (TR-3025) and the above discussion, Duke has determined that these actuators are capable of performing their safety function and that continued use of the NA-2 actuator in its current applications is acceptable.

NRC/FRC Equipment Item 39 - Rosemount Transmitters Model 11536A9 (RCS Wide Range Pressure Transmitter) Located in the Annulus

Statement of Problem: Based on the FRC review, the Rosemount 1153GA9 transmitter is identified as not qualified for accident conditions. Reference is made to the Rosemount qualification report submitted as part of the H. B. Robinson facility SER response. This report identifies failed components in the 1153 Series A transmitters due to environmental testing in accordance with IEEE 323-1974.

Background Information: The applicable qualification document, as referenced in Duke's NUREG 0588 response, is Rosemount Report No. 3788, Revision A. This report documents results of type testing which qualifies the Model 1153 Series A transmitter for Class 1E service in Nuclear Power Generating Stations. This testing followed the guidelines of IEEE 323-1971. Based on time of procurement, IEEE 323-1971 is applicable to qualification of the McGuire Units 1 and 2 RCS wide range pressure transmitters.

Analysis: Rosemount Report No. 3788, Revision A documents that the Rosemount Model 1153 Series A transmitter successfully completed applicable testing with no significant anomalies. Qualification temperature was 350°F, relative humidity 100% and radiation dose 4×10^7 R. The accident environment for the McGuire Units 1 and 2 RCS wide range pressure transmitters, located in the annulus, is 142°F, relative humidity 100% and radiation dose 1.2×10^7 R. Pressure, steam, and chemical spray environments are not a consideration in the annulus. The Rosemount report referenced in the H. B. Robinson SER response does not apply to the Duke transmitters. Based on the above discussion, our position is that the subject transmitters are qualified to perform their safety function in the accident environment as identified in the McGuire NUREG 0588 response.