

DUKE POWER COMPANY

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February 23, 1983

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

✓ 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 Unit 2
Docket No. 50-370

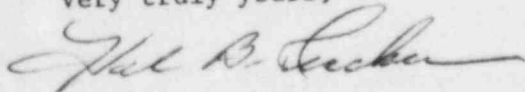
Dear Mr. Denton:

Attached is Duke Power Company's response to 10CFR 50.49 for McGuire Nuclear Station - Unit 2. This response addresses compliance with Section 50.49(b)(1), (2) and (3) and provides the analysis required by 50.49(i). It is suggested that any requirement for completion of further analysis be included in the McGuire Nuclear Station Unit 2 operating license as a condition of exceeding 5% power level. Thus, Duke Power Company's response to the Franklin Technical Evaluation Report and accompanying Safety Evaluation Report would be submitted prior to exceeding 5% power.

The operation of McGuire Unit 2 under the 5% license provision is not expected to exceed "0%" power except for a limited period of approximately four hours at 3% power to perform core physics mapping. Therefore, with this power condition (or similar power conditions of brief operating periods of less than 5%), core decay heat and production of fission products is negligible. For this reason and the other reasons provided in the attachment, the absence of complete environmental qualification for the equipment discussed in the attachment is not considered to be a safety concern.

Please advise if there are any questions regarding this matter.

Very truly yours,



H. B. Tucker

GAC:scs

Attachment

A048

Mr. Harold R. Denton, Director
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cc: Mr. James P. O'Reilly, Regional Administrator Senior Resident Inspector
U. S. Nuclear Regulatory Commission McGuire Nuclear Station
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

MCGUIRE NUCLEAR STATION UNIT 2

In response to 10CFR 50.49, Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants and to the McGuire Unit 2 SER, Section 7.8, Duke Power Company is providing the following information:

10CFR 50.49(b) - Scope

The following paragraphs discuss the scope of the equipment qualification rule as it relates to McGuire Unit 2.

- With regard to 10CFR 50.49(b)(1), safety-related electrical equipment located in a harsh environment is identified in Duke Power Company's June 30, 1982 NUREG-0588 submittal for the McGuire Nuclear Station.
- With regard to 10CFR 50.49(b)(2), Duke Power Company has not identified any non-safety-related electrical equipment located in a harsh environment whose failure under the postulated accident conditions could prevent satisfactory accomplishment of a safety function by safety-related equipment. This determination was based on a review of Duke's design practices for McGuire, the McGuire electrical and physical separation criteria, and previous reviews in this area with regard to IE Information Notice 79-22. This issue is also being addressed by the NRC as an Unresolved Safety Issue (A-47). Duke Power Company is following the status of this issue and will take action as appropriate when this issue is resolved.
- With regard to 10CFR 50.49(b)(3), McGuire Technical Specification Table 3.3-10 identifies accident monitoring instrumentation and serves as the basis for accident monitoring requirements. All items identified in Table 3.3-10 are located in a harsh environment and included in the June 30, 1982 McGuire NUREG-0588 submittal except the containment pressure transmitters, the RWST level transmitters, the auxiliary feedwater flow transmitters, the incore thermocouple instrumentation, unit vent radiation monitors, and the steam relief radiation monitors. The containment pressure transmitters, RWST level transmitters and the unit vent radiation monitors are located in mild environments, and therefore, not subject to the requirements of 10CFR 50.49. The auxiliary feedwater flow transmitters will be relocated to a mild environment area prior to exceeding 5% power. The steam relief radiation monitors are located in a harsh environment; however, the monitors are not required to function for the event that causes the harsh environment. Furthermore, these monitors are not employed as a post-accident parameter for operator action. The incore thermocouple instrumentation was not considered safety-related, and therefore, was not addressed in the McGuire NUREG-0588 submittal. However, the in-containment portion of the incore thermocouple instrumentation will be environmentally qualified prior to startup following the first refueling outage for McGuire Unit 2 (justification for this item is provided in the following section).

It should also be noted that consistent with NUREG-0737, Supplement 1 and NRC Generic Letter 82-33 dated December 17, 1982, Duke Power Company will provide a description of proposed action and an associated schedule for Supplement 1 items including post-accident monitoring (Regulatory Guide 1.97) by April 15, 1983.

Analysis of Plant Safety Pending Completion of Environmental Qualification

Based on Duke Power Company's June 30, 1982 NUREG-0588 submittal for the McGuire Nuclear Station, a total of 19 equipment items had environmental qualification programs or plant relocation pending completion. As of February 23, 1983 the qualification programs or relocation work have been successfully completed for all equipment items except the Westinghouse reactor vessel level instrumentation (McGuire NUREG-0588 submittal, Attachment 1, page 35), the Robertshaw level switches Model SL-402-B4-3 (McGuire NUREG-0588 submittal, Attachment 3, page 30), and incore thermocouple instrumentation (not yet addressed in the McGuire NUREG-0588 submittal).

- Reactor Vessel Level Instrumentation (RVLIS)

The RVLIS is a TMI/NUREG-0737 item. This system is not installed on McGuire Unit 2, therefore, equipment qualification does not need to be addressed. Installation of this system is expected to be required prior to startup following the first refueling outage of McGuire Unit 2. The NRC Staff has indicated that this installation requirement will be a condition of the McGuire Unit 2 operating license.

- Robertshaw Level Switches (Model SL-402-B4-3)

A qualification program for two brands of level switches is currently in progress. Based on the results of the thermal conditioning (aging) of the Robertshaw level switches, a decision has been made to replace the Robertshaw level switches with Magentrol level switches which are included in the above-mentioned qualification program. The qualification program and installation of the Magentrol level switches will be complete prior to exceeding 5% power. In the event that proper qualification is not demonstrated by this program within the above time frame, additional justification would be provided to the NRC Staff.

These level switches are installed outside containment in the doghouse and function to terminate main feedwater flow in the event of a feedwater line break in the doghouse in order to prevent flooding of safety-related equipment. Prior to exceeding 5% power, the core decay heat and fission product activity is not sufficient to affect public health and safety assuming a feedwater line break in the doghouse. Redundancy of the auxiliary feedwater system assures adequate secondary heat sink for the assumed break.

- Incore Thermocouple Instrumentation

The incore thermocouple instrumentation is a TMI/NUREG-0737 item. This instrumentation was not considered safety-related, and therefore, not addressed in the McGuire NUREG-0588 submittal. However, the in-containment portion of the incore thermocouple instrumentation will be environmentally qualified prior to startup following the first refueling outage for McGuire Unit 2. This action/schedule is consistent with a McGuire Unit 1 operating license condition. The NRC Staff has indicated that the same condition will be included in the McGuire Unit 2 operating license.

The incore thermocouples serve as one indication of inadequate core cooling. Other indications available to the operator include RCS hot leg temperature, RCS cold leg temperature, and RCS wide range pressure which are developed from environmentally qualified instruments.

Equipment Differences Between McGuire Unit 2 and Unit 1

The McGuire Unit 2 SER, Section 7.8 identified Barton transmitters Models 763 (Lot 5) and 764 (Lot 5) as equipment items installed in Unit 2 that are different from the corresponding transmitters installed in Unit 1. The SER also states that qualification data would be provided at a future date by Duke.

The McGuire Unit 2 Barton transmitters identified in the SER are supplied by Westinghouse as a part of the McGuire NSSS contract with the exception of the RCS flow transmitters which were supplied by Duke. The qualification of the Barton Lot 5 transmitters supplied by Westinghouse is based on similarity to the Barton Lot 4 transmitters whose qualification is reported in WCAP 8687, Supplement 1, EO1A and EO3A (EO1A covers the Barton Model 763 pressure transmitter and EO3A covers the Barton Model 764 differential pressure transmitter). The qualification parameters for the Barton Lot 5 pressure and differential pressure transmitters as reported in the above-referenced WCAP envelop the McGuire Unit 2 requirements for Items 1, 2, 3, and 5 identified in the SER.

With regard to the RCS flow transmitters (SER Item 4), the McGuire NUREG-0588 submittal states that the transmitters are not required to function for accidents that cause a change in the containment environment. Further, we have determined that any consequential failure of the RCS flow transmitters, due to the adverse environment following an HELB, will not prejudice the safety function of other equipment claimed in the accident analysis. Additionally, the information provided by this instrument is not employed as a post-accident monitoring parameter for operator action.

Detailed information concerning the environmental qualification of the Westinghouse supplied Barton Lot 5 pressure and differential pressure transmitters and the above statement concerning the RCS flow transmitters will be incorporated in the McGuire NUREG-0588 submittal.

With regard to the Barton Lot 5 pressure and differential pressure transmitters supplied by Westinghouse for McGuire Unit 2, it should be noted that Duke Power Company filed a Significant Deficiency Report (50 370/82-06) on December 10, 1982 regarding a potential thermal non-repeatability concern. Based on information recently received from ITT Barton detailing the magnitude of bounding errors (1% for pressure transmitters and 1.25% for differential pressure transmitters), Duke and Westinghouse have performed a preliminary assessment of the impact of these increased errors on the specific Barton Lot 5 transmitter applications. The results of the assessment indicate that sufficient margin exists in the existing protection system setpoints and that the increased errors are acceptable. Further detailed studies by Westinghouse are in progress and the results of these studies will be reported to NRC in an update to SD 370/82-06.