

DUKE POWER COMPANY

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November 1, 1982

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:

Mr. W. O. Parker, Jr.'s letter of June 30, 1982 provided Duke Power Company's responses to NUREG-0737, Item II.D.1. This response contained four reports addressing operability of pressurizer power operated relief valves (PORVs), safety valves, PORV block valves, and associated piping and supports. The report on the piping and supports contained Duke's preliminary evaluation with a commitment to provide our final evaluation by November 1, 1982.

Attached is a summary of the results of the evaluation and of action planned and taken on the piping and support systems. Note that this report addresses both Unit 1 and Unit 2.

Please advise if there are further questions regarding this matter.

Very truly yours,

H.B. Tucker / BT

Hal B. Tucker

GAC/php
Attachment

cc: Senior Resident Inspector
McGuire Nuclear Station

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
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MCGUIRE NUCLEAR STATION
PWR SAFETY/RELIEF VALVE PIPING EVALUATION
NUREG 0737, ITEM II.D.1.A.

NUREG-0737, Item II. D.1.A required that utilities provide evidence, supported by test, of the adequacy of PWR pressurizer SRV and PORV piping and supports. Duke Power has been a participant in the PWR Safety and Relief Valves Test Program, and has used this data as a basis for our piping evaluation. In our June 30, 1982 submittal, Duke Power committed to providing a piping evaluation by November 1, 1982. In accordance with that commitment Duke Power provides the following evaluations.

McGuire Unit 1

An iterative analytical study was performed to verify the functionality of the McGuire Unit 1 pressurizer safety and relief system in the event that a S/RV discharge occurs with the existing piping and support design. This study allowed some yielding to occur in several discharge piping supports and provided the system with adequate time to respond to the effects of support yielding. All portions of the piping and supports in the Class I Primary Coolant Boundary were shown to have acceptable stress levels per ASME, Section III. The following areas were evaluated:

- 1) Support integrity
- 2) Pipe functionality
- 3) Valve operability (applied moments)
- 4) Nozzle loads

The results of the analysis indicated that the system is functional for a safety/relief valve discharge event demonstrating the adequacy of McGuire Unit 1 SRV and PORV piping and supports in accordance with NUREG 0737, Item II.D.1.A.

In addition to the above analysis, Duke Power is evaluating methods to heat the water contained in the inlet loop seal, since EPRI testing showed substantial discharge piping load reductions with hot loop seal water. Heating the loop seal is not required to assure discharge pipe operability but will enhance system reliability and will significantly reduce the cost and time required to reverify piping integrity in the unlikely event that a safety valve discharge should occur.

McGuire Unit 2

Because of the different circumstances of Unit 2, construction status, availability of anchoring space, lack of contamination, time considerations, a different approach to discharge pipe support loads was used. The pipe supports were redesigned to accept the increased loads that were identified as a result of the EPRI test data. For Unit 2, all portions of the valve inlet have acceptable stress levels per ASME, Section III, and all portions of the discharge have acceptable stress levels per ANSI B31.1. This satisfies Duke Power's responsibility to demonstrate adequacy of McGuire Unit 2 SRV and PORV Piping and Supports in accordance with NUREG 0737, Item II.D.1.A.