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the southern electric system

NED-84-204

April 23, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz, Chief
Operating Reactors Branch No. 4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2
SCRAM DISCHARGE VOLUME VENT AND DRAIN CLOSURE TIMES

Gentlemen:

By letter of December 22, 1983, Georgia Power Company provided to NRC an analysis concerning operation with scram discharge volume (SDV) vent and drain valve closure times in excess of 30 seconds (the current GE specification). At NRC request, this analysis was provided to General Electric for review. Additionally, GE was asked to provide bases for the 30 second closure time specification. This letter provides the results of the GE review and our plans to resolve the closure time issue.

GE provided no quantitative basis for the 30 second closure times, and it appears that none exists. However, qualitative bases addressing three areas were provided: 1) Hydrodynamic Loads; 2) CRD Leakage Flow; and 3) High Temperatures.

1. Hydrodynamic loads are caused when the SDV vent and drain valves close. The nature and extent of these loads is very dependent on piping configuration. GE provided no correlation between hydrodynamic loads and valve closure times.
2. CRD leakage flow could fill the SDV, resulting in water flow through the vent lines if the vent valve has not closed. This could result in additional pipe loadings and possible radiological concerns.
3. High temperatures exceeding the piping and equipment design temperature of 280 F are more likely to occur if the 30 second closure time limit is exceeded. The design versus actual operating temperature of the scram discharge system has been the subject of considerable discussion among GE, industry, and NRC. GE has since specified the 30 second limit, which was not one of the of the original Hatch design criteria, to help limit temperatures of the system following a scram.

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U. S. Nuclear Regulatory Commission
Division of Licensing
April 23, 1984
Page 2

As a result of their assessment of items to be considered, which was qualitative in nature, and their industry-wide posture regarding the 30 second closure times, GE was unable to concur with our analysis as provided in the December 22, 1983, letter. Since extensive analyses would be required to justify longer closure times, we are now investigating minor hardware modifications to bring the closure times closer to the 30 second limit. A test has been scheduled for Unit 2 during the current outage to determine minimum closure times obtainable with these minor system modifications. If the results of this test indicate that minor modifications alone will not bring the closure times to within the 30 second limit, we have instructed our architect/engineer to expedite procurement and design of modifications necessary to achieve 30 second closure times. Following completion of this test, we will provide you with a schedule for completion of necessary modifications.

We would like to reiterate that Hatch Unit 1 was designed, and has operated for nine years, with vent and drain valve closure times well in excess of the current GE specification. In this time, the only damage to the SDV, SDV piping, or supports that has been found has been one bent hanger, attributed to an installation error. Hatch Unit 2 did experience hydrodynamically caused damage to the floats in the SDV instrument volumes. This problem was attributed to instrument line routing and was corrected. At the time this damage occurred, closure times for Unit 2 were measured and found to be under 30 seconds, indicating that valve closure times were not a factor. We therefore believe that continued operation with the longer closure times represents no risk to the health and safety of the public.

Please contact this office if you desire further information.

Very truly yours,



L. T. Gucwa

REB/

xc: H. C. Nix, Jr.
J. P. O'Reilly (NRC-RII)
Senior Resident Inspector, Plant Hatch