May 2, 1985

Docket No. 50-364

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Mr. R. P. McDonald
Senior Vice President
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Dear Mr. McDonald:

SUBJECT: PRESSURE-TEMPERATURE LIMIT CALCULATIONS FOR JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

On January 22, 1985 the Commission issued License Amendment No. 48 to Facility Operating License NPF-8. The amendment was in response to your application dated February 10, 1984, supplemented June 18, 1984. In the transmittal letter for the amendment we noted that action was not being taken at that time on the proposed pressure-temperature limits of Technical Specification Figures 3.4-2 and 3.4-3.

We discussed the reasons with your staff who agreed that Figures 3.4-2 and 3.4-3, as proposed, would not be required for Cycle 4 operation. However, since the figures are dependent on effective full power years of operation new figures would be needed prior to Cycle 5. On that basis, certain NRC staff concerns should be addressed in your next submittal relating to the pressure-temperature limits.

These concerns, as noted in the enclosure, should be addressed in your license amendment application. We request that you submit the amendment request for NRC staff review within six months of your need date for the Cycle 5 operation.

Sincerely,

/s/SAVarga

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

ORB#1:DL	ORB#1:DL	BC-ORB#1:DL	AD:OR:DL
CParrish	EReeves/ts	SVarga	GLainas
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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As stated

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See next page

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State Department of Public Health
State Office Building
Montgomery, Alabama 36130

Enclosure

Clarification of Closure Flange Region Safety Margins

ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT 2

1. The licensee's consultant has indicated that the moment arm of the bolt force about the center of gravity of the flange bearing pressure diagram was measured to the outer edge for reasons having to do with the finite element modeling. In a real reactor vessel the barrel pressure will be distribed over the mating surface (core barrel to flange and head to flange), which will result in a greater moment arm at the flange junctions than that calculated by the finite element method used by the licensee's consultant. The licensee must provide an analysis that accounts for this larger moment arm, which results from a realistic distribution of the bearing pressure.

2. The finite element stress analysis must account for the stress concentration effect of fillets at the flange junctions. The licensee must explain how the finite element analysis determined the effect fillets on the localized stresses concentration. Indicate the peak and nominal stress values adjacent to the closure flange fillets.

3. Describe the dimensional analysis that was performed to determined that the finite element stress analysis performed for the Comanche Peak vessels will be conservative for the Farley 2 vessel.

4. In order to demonstrate that the beltline region is more limiting than the flange region, indicate the minimum metal temperature at the flange and beltline regions, which results from the fracture analysis. During a heatup and cooldown, what are the required minmum water temperatures to ensure that the limiting flange locations will be equal to or greater that the required minimum metal temperatures?