

March 14, 1986

Docket Nos. 50-348  
and 50-364

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

Dear Mr. McDonald:

DISTRIBUTION

Docket File	B. Grimes
NRC PDR	J. Partlow
Local PDR	T. Barnhart (8)
PAD#2 rdg	W. Jones
T. Novak	V. Benaroya
C. Vogan	Tech Branch
E. Reeves(2)	ACRS (10)
OELD	OPA
L. Harmon	C. Miles (LFMB)
E. Jordan	Gray File
M. Dunenfeld	

The Commission has issued the enclosed Amendment No. 61 to Facility Operating License No. NPF-2 and Amendment No. 52 to NPF-8 for the Joseph M. Farley Nuclear Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated November 27, 1985.

The amendments revise Technical Specifications surveillance requirements for the Quadrant Power Tilt Ratio to allow use of a full core flux map using two sets of four symmetric thimble locations to determine core quadrant tilt. The change agrees with Draft Revision 5 to the Westinghouse Standard Technical Specifications.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

/s/

Edward A. Reeves, Project Manager  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 61 to NPF-2
2. Amendment No. 52 to NPF-8
3. Safety Evaluation

cc: w/enclosures  
See next page

LA:PAD#3  
CVogan *W*  
2/26/86

PM:PAD#1  
EReeves:hc  
2/26/86

BC:FOB  
VBenaroya  
2/26/86

D:PAD#2  
LRubenstein  
2/26/86

OELD  
2/28/86

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PDR ADDCK 05000348  
PDR

Mr. R. P. McDonald  
Alabama Power Company

Joseph M. Farley Nuclear Plant

cc:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 61  
License No. NPF-2

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Alabama Power Company (the licensee) dated November 27, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-2 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 61, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 14, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 61  
TO FACILITY OPERATING LICENSE NO. NPF-2  
DOCKET NO. 50-348

Revised Appendix A as follows:

Remove Pages

3/4 2-13  
3/4 3-6  
B 3/4 2-5

Insert Pages

3/4 2-13  
3/4 3-6  
B 3/4 2-5

## POWER DISTRIBUTION LIMITS

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### ACTION: (Continued)

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.
3. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 50% of RATED THERMAL POWER may proceed provided that the QUADRANT POWER TILT RATIO is verified within its limit at least once per hour for 12 hours or until verified at 95% or greater RATED THERMAL POWER.
- d. The provisions of Specification 3.0.4 are not applicable.

### SURVEILLANCE REQUIREMENTS

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4.2.4.1 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 50% of RATED THERMAL POWER by:

- a. Calculating the ratio at least once per 7 days when the alarm is OPERABLE.
- b. Calculating the ratio at least once per 12 hours during steady state operation when the alarm is inoperable.

4.2.4.2 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 75% of RATED THERMAL POWER with one Power Range Channel inoperable by using the movable incore detectors to confirm that the normalized symmetric power distribution, obtained from the two sets of four symmetric thimble locations or full-core flux map per Specification 3.3.3.2, is consistent with the indicated QUADRANT POWER TILT RATIO at least once per 12 hours.

TABLE 3.3-1 (Continued)

TABLE NOTATION

\*

With the reactor trip system breakers in the closed position, the control rod drive system capable of rod withdrawal, and fuel in the reactor vessel.

\*\*

The channel(s) associated with the protective functions derived from the out of service Reactor Coolant Loop shall be placed in the tripped condition.

#

The provisions of Specification 3.0.4 are not applicable.

##

High voltage to detector may be de-energized above P-6.

###

Indication only.

####

The provisions of Specification 3.0.3 are not applicable if THERMAL POWER level  $\geq$  10% of RATED THERMAL POWER.

ACTION STATEMENTS

ACTION 1 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, be in HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.

ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

- a. The inoperable channel is placed in the tripped condition within 1 hour.
- b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of the other channels per Specification 4.3.1.1.
- c. Either, THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER and the Power Range Neutron Flux trip setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 4 hours; or, the QUADRANT POWER TILT RATIO from the remaining 3 detectors is monitored at least once per 12 hours per Specification 4.2.4.2.

## POWER DISTRIBUTION LIMITS

### BASES

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The radial peaking factor  $F_{xy}(Z)$ , is measured periodically to provide additional assurance that the hot channel factor,  $FQ(Z)$ , remains within its limit. The  $F_{xy}$  limit for RATED THERMAL POWER ( $FRTP_{xy}$ ) as provided in the Radial Peaking Factor limit report per Specification 6.9.1.11 was determined from expected power control maneuvers over the full range of burnup conditions in the core.

#### 3/4.2.4 QUADRANT POWER TILT RATIO

The quadrant power tilt ratio limit assures that the radial power distribution satisfies the design values used in the power capability analysis. Radial power distribution measurements are made during startup testing and periodically during power operation.

The limit of 1.02, at which corrective action is required, provides DNB and linear heat generation rate protection with x-y plane power tilts.

The two hour time allowance for operation with a tilt condition greater than 1.02 but less than 1.09 is provided to allow identification and correction of a dropped or misaligned control rod. In the event such action does not correct the tilt, the margin for uncertainty on  $FQ$  is reinstated by reducing the maximum allowed power by 3 percent for each percent of tilt in excess of 1.0.

For purposes of monitoring QUADRANT POWER TILT RATIO when one excore detector is inoperable, the movable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the QUADRANT POWER TILT RATIO. The incore detector monitoring is done with a full incore flux map or two sets of four symmetric thimbles. The two sets of four symmetric thimbles is a unique set of eight detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, N-8.

#### 3/4.2.5 DNB PARAMETERS

The limits on the DNB related parameters assure that each of the parameters are maintained within the normal steady state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a minimum DNBR of 1.30 throughout each analyzed transient.

The 12 hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation. The 18 month periodic measurement of the RCS total flow rate is adequate to detect flow degradation and ensure correlation of the flow indication channels with measured flow such that the indicated percent flow will provide sufficient verification of flow rate on a 12 hour basis.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 52  
License No. NPF-8

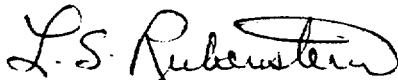
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Alabama Power Company (the licensee) dated November 27, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-8 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 52, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing-A

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 14, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 52  
TO FACILITY OPERATING LICENSE NO. NPF-8  
DOCKET NO. 50-364

Revised Appendix A as follows:

Remove Pages

3/4 2-13  
3/4 3-6  
B 3/4 2-5

Insert Pages

3/4 2-13  
3/4 3-6  
B 3/4 2-5

## POWER DISTRIBUTION LIMITS

### ACTION: (Continued)

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.
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- d. The provisions of Specification 3.0.4 are not applicable.

## SURVEILLANCE REQUIREMENTS

4.2.4.1 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 50% of RATED THERMAL POWER by:

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TABLE 3.3-1 (Continued)

TABLE NOTATION

\* With the reactor trip system breakers in the closed position, the control rod drive system capable of rod withdrawal, and fuel in the reactor vessel.

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## High voltage to detector may be de-energized above P-6.

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The 12 hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation. The 18 month periodic measurement of the RCS total flow rate is adequate to detect flow degradation and ensure correlation of the flow indication channels with measured flow such that the indicated percent flow will provide sufficient verification of flow rate on a 12 hour basis.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. NPF-2  
AND AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. NPF-8

ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-348 AND 50-364

Introduction

By letter dated November 27, 1985, Alabama Power Company (APCo) proposed Technical Specification changes to revise Technical Specifications 4.2.4.2 and Action 2.d of Table 3.3-1 to allow a full core flux map for verifying the indicated Quadrant Power Tilt Ratio (QPTR) when one excore power range detector is inoperable. The present Technical Specifications only allow use of the symmetric thimble locations for this function. Our evaluation of the licensee proposal follows.

Evaluation

Use of a full core flux map would provide a more accurate representation of core performance than a map developed from the symmetric thimble locations. While the information from the symmetric thimbles is acceptable for determining the quadrant tilt, the proposed change provides an option which, in general, provides better information. In addition, the proposed change is in agreement with the Draft Revision 5 to the Westinghouse Standard Technical Specifications which we consider acceptable for use by all licensees.

Since the proposed Technical Specification change involves no changes which would significantly increase the probability or consequences of an accident previously evaluated, no changes which create the possibility of a new or different kind of accident from any accidents previously evaluated and no changes which would involve a significant reduction in a margin of safety, we find that it does not involve a significant hazards consideration.

Safety Summary

Based on our review of the licensee's submittal and the evaluation as noted above, we find the proposed changes to the Farley Units 1 and 2 Technical Specifications to be acceptable.

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### Environmental Consideration

These amendments involve only changes in administrative procedure and requirements. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

### Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 14, 1986

### Principal Contributors:

M. Dunenfeld