Docket No. 50-348

June 4, 1991

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Mr. W. G. Hairston, III
Senior Vice President
Alabama Power Company
40 Inverness Center Parkway
Post Office Box 2641
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: ISSUANCE OF AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. NPF-2 REGARDING RESPONSE TIME FOR STEAM LINE ISOLATION - JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1, (TAC NO. 80413)

On May 17, 1991, you requested a Temporary Waiver of Compliance and a Technical Specification amendment with respect to Joseph M. Farley Nuclear Plant, Unit 1, Technical Specification Table 3.3-5, Item No. 5. The Temporary Waiver of Compliance was granted verbally on May 17, 1991, until processing of this emergency license amendment could be completed.

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 89 to Facility Operating License NPF-2 for the Joseph M. Farley Nuclear Plant, Unit 1. This amendment consists of a change to the Technical Specifications in response to your submittal dated May 17, 1991.

The amendment revises Technical Specification Table 3.3-5, "Engineered Safety Features Response Times." The change increases the engineered safety features response time for steam line isolation on high steam flow in two steam lines coincident with T-average low-low from the current value of less than or equal to 9 seconds to less than or equal to 11 seconds.

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

Sincerely,

Orignal signed by:
Stephen T. Hofman, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 89 to NPF-2
2. Safety Evaluation

cc w/enclosures:
See next page

OFC	:LA:PD21:DRPE	:PM:PD21:DRPE	:SICB	:SRXB	:SPLB	:OGC	:(A)D:PD21:
NAME	: PAnderson	: SHoffman:dt	: SNewberry	:RJones	:CMcCracken	:	:AMendiola
DATE	:6/3/91	:5/31/91	:5/13/91	:5/31/91	:5/13/91	:6/3/91	:6/4/91

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AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. NPF-2 - FARLEY, UNIT 1

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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 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 89
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 May 17, 1991, 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, the provisions of the Act, and the rules and 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 89 , are hereby incorporated into the license. Alabama Power Company 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

Orignal signed by:

Anthony J. Mendiola, Acting Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 4, 1991

OFC	:LA:PD21:DRPE	:PM:PD21:DRPE	:(A)D:PD21:DRPE	:	:	: :
NAME	: PAnderson	: SHoffman:	:AMendiola			
DATE	:5/30/91	:5/31/91	:6/4/91	:	:	:

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ATTACHMENT TO LICENSE AMENDMENT NO. 89

FACILITY OPERATING LICENSE NO. NPF-2

DOCKET NO. 50-348

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages as indicated. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 3-30	3/4 3-30

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
3. Pressurizer Pressure-Low	
a. Safety Injection (ECCS)	$\leq$ 27.0[1]/12.0[4]
b. Reactor Trip (from SI)	$\leq$ 2.0
c. Feedwater Isolation	$\leq$ 32.0[6]
d. Containment Isolation-Phase "A"	$\leq$ 17.0[4]
e. Containment Purge Isolation	$\leq$ 5.0
f. Auxiliary Feedwater Pumps	Not Applicable
g. Service Water System	$\leq$ 77.0[4]/87.0[1]
4. Differential Pressure Between Steam Lines-High	
a. Safety Injection (ECCS)	$\leq$ 12.0[4]/22.0[5]
b. Reactor Trip (from SI)	$\leq$ 2.0
c. Feedwater Isolation	$\leq$ 32.0[6]
d. Containment Isolation-Phase "A"	$\leq$ 17.0[4]/27.0[5]
e. Containment Purge Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	Not Applicable
g. Service Water System	$\leq$ 77.0[4]/87.0[5]
5. Steam Flow in Two Steam Lines-High Coincident with T_{avg}--Low-Low	
a. Steam Line Isolation	$\leq$ 11.0
6. Steam Line Pressure-Low	
a. Safety Injection (ECCS)	$\leq$ 12.0[4]/22.0[5]
b. Reactor Trip (from SI)	$\leq$ 2.0
c. Feedwater Isolation	$\leq$ 32.0[6]
d. Containment Isolation-Phase "A"	$\leq$ 17.0[4]/27.0[5]
e. Containment Purge Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	Not Applicable
g. Service Water System	$\leq$ 77.0[4]/87.0[5]
h. Steam Line Isolation	$\leq$ 7.0

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. NPF-2

ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-348

1.0 INTRODUCTION

By letter dated May 17, 1991, Alabama Power Company (the licensee) submitted a request to revise Table 3.3-5, "Engineered Safety Features Response Times," for Joseph M. Farley Nuclear Plant (Farley), Unit 1. In addition, a Temporary Waiver of Compliance was requested and granted on May 17, 1991, until this amendment could become effective. The request increased the response time for Table 3.3-5, Item No. 5, steam flow in two steam lines-high coincident with T-average low-low, from less than or equal to 9 seconds to less than or equal to 11 seconds.

2.0 BACKGROUND

The proposed amendment results from an earlier modification that replaced the existing resistance temperature detector (RTD) bypass manifold system with thermowell mounted, narrow range, fast response, dual element RTDs located directly in the reactor coolant system piping. This modification was addressed in Amendment No. 87 to Operating License NPF-2. Amendment No. 87 approved a response time increase from 4 to 6 seconds for the overtemperature delta-T reactor trip based on the increased response time of the thermowell mounted RTDs. This increase to 6 seconds was consistent with the allowable channel response time assumed in the safety analysis. The allowable value for T-average low-low was also revised as a result of the RTD bypass manifold modification. However, it was not identified that the engineered safety feature (ESF) response time in Technical Specification Table 3.3-5, Item No. 5, for steam line isolation on high steam flow in two lines coincident with low-low T-average would not be met with the revised RTD response times of the RTD bypass manifold modification.

During response time testing for Farley, Unit 1, startup, it was observed that the 9 second response time for ESF steam line isolation required by Item No. 5 of Technical Specification Table 3.3-5, could not be satisfied for the main steam isolation bypass valves. The licensee proposed an increase in the response time for ESF steam line isolation from less than or equal to 9 seconds to less than or equal to 11 seconds.

The licensee indicated that the high steam flow coincident with T-average low-low ESF function is not taken credit for in any safety analysis and that protection for postulated accidents is provided by other protection signals. The licensee stated that steam line isolation on high steam flow in two steam lines coincident with T-average low-low is provided as a diverse signal that does not provide primary protection for any event. Protection for main steam pipe breaks is provided by the overpower protection, overtemperature delta-T, and low pressurizer pressure reactor trip functions and the low steam line pressure, high steam line differential pressure, low pressurizer pressure, High-1 containment pressure ESF functions. Primary main steam line isolation protection is provided by the low steam line pressure and High-2 containment pressure ESF functions. Therefore, the licensee stated that the increase in response time to less than or equal to 11 seconds will have no effect on any previously analyzed accident.

3.0 EVALUATION

Amendment No. 87 revised the response time for overtemperature delta-T from 4 to 6 seconds based on the response time of the thermowell mounted RTDs. The T-average signal utilized for ESF steam line isolation is derived from the same RTDs associated with the overtemperature delta-T trip evaluated in Amendment No. 87. Therefore, the response time for steam line isolation is also affected by the increased response time imposed by the RTD bypass modification and should have been increased in Amendment No. 87. An evaluation by the licensee of the uncertainties associated with the new thermowell mounted RTDs confirmed the conclusions of the safety analysis. Based on the above, the NRC staff finds acceptable the change in response time for steam line isolation.

With respect to the steam line isolation function, other ESF signals are used in the Farley, Unit 1, design to produce an automatic trip of the isolation valves in the main steam system. Chapter 15 of the Farley Final Safety Analysis Report (FSAR) describes two postulated events in which automatic trip signals would minimize the consequences of the event by closing the main steam isolation and bypass valves. The two postulated events which would affect the main steam system are an accidental depressurization of the main steam system or a rupture of a main steam line. In these instances, isolation of the main steam system would still occur by diverse ESF signals associated with high-high containment pressure, low steam line pressure, low pressurizer pressure or high differential pressure between steam lines. As isolation of the main steam system will still occur due to the diverse ESF signals (which are unaffected by the change associated with this amendment), there is no adverse impact on safety.

The licensee stated that the two second increase in response time will have no effect on any previously analyzed accident. The two ESF signals

that are unchanged by this amendment are still available to isolate the main steam system. Although the licensee stated that no credit is taken in the safety analyses for isolation of main steam by the ESF signal being changed, the NRC staff evaluated the consequences of a postulated two second delay in isolation of main steam due to the increase in response time for this signal. As a result of its review, the staff finds acceptable the small increase in response time of two seconds for steam line isolation on high steam flow coincident with low-low T-average. The worst case impact of the two second increase in response time is a slight increase (less than 1%) in steam released to the atmosphere prior to steam line isolation which would contribute to a slight increase in dose rates at the site boundary and low population zone which are shown in the FSAR to already be a very small fraction of 10 CFR Part 100 limits.

4.0 SUMMARY

Based on the foregoing, the NRC staff finds that granting of the requested amendment is appropriate since diverse ESF signals are available which will cause isolation of the main steam lines. Isolation time for the main steam lines for postulated accidents will be unchanged and there will be no adverse impact on safety.

5.0 STATEMENT OF EMERGENCY SITUATION

Title 10 Code of Federal Regulations Section 50.91(a)(5) makes provision for issuing a license amendment without prior notice and opportunity for a hearing or public comment, provided the Commission finds that an emergency situation exists. The licensee provided a basis for a determination of an emergency situation in its letter dated May 17, 1991.

Failure to issue the Temporary Waiver of Compliance and this emergency license amendment would prevent resumption of operation of Farley, Unit 1. Amendment No. 87 issued the Technical Specification changes and the NRC staff's Safety Evaluation associated with the RTD bypass system modification and increased steam generator tube plugging limit. The licensee has implemented the RTD bypass system modification and was proceeding with post-refueling outage plant startup activities. However, it was not identified that the ESF response time for steam line isolation on high steam flow coincident with low-low T-average could exceed the previous limit of less than or equal to 9 seconds until conduct of RTD response time testing on May 17, 1991. This response time change should have been included in Amendment No. 87. Until the requirement of Technical Specification Table 3.3-5, Item No. 5, was revised or waived, Farley, Unit 1, could not enter operational Mode 1. The NRC staff has reviewed the licensee's justification and concurred with their basis for resumption of operation and the need for an emergency amendment. A Temporary Waiver of Compliance was issued to allow resumption of operation until this amendment could be processed on an emergency basis.

6.0 FINAL DETERMINATION OF NO SIGNIFICANT HAZARDS

The Commission has provided standards for determining whether a no significant hazards consideration exists as stated in 10 CFR 50.92(c). A proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The licensee has reviewed the proposed change and has determined that the requested amendment does not involve a significant hazards consideration for the following reasons:

1. The ESF response time increase for this steam line isolation function does not significantly increase the probability or consequences of an accident previously evaluated in the FSAR. This function provides no primary protection for any transient in the FSAR. No new performance requirements are being imposed on any system or component. Consequently, overall plant integrity is not reduced. These changes have no effect on any dose calculations. Therefore, the probability or consequences of an accident will not increase.

2. The ESF response time increase of 2 seconds for the high steam flow coincident with T_{avg} low-low function does not create the possibility of a new or different kind of accident from any previously evaluated in the FSAR. This response time is not an initiator for any transient. No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of this 2 second increase. The response time increase does not challenge or prevent the performance of any safety-related system during plant transients. Therefore, the possibility of a new or different kind of accident is not created.

3. This change does not involve a significant reduction in the margin of safety. All primary trip functions and ESF actuations are unaffected by the increase in this ESF response time. Therefore, the change to the response time does not effect the results of any accident analysis, and the margin of safety is maintained and not significantly reduced.

The NRC staff has reviewed the licensee's no significant hazards consideration analysis and agrees that it satisfies the standards of 10 CFR 50.92. Based on this review, the staff has determined that the licensee has satisfied the relevant three criteria. The staff, therefore, has made a final determination that the proposed amendment involves no significant hazards consideration.

7.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Alabama official was notified of the proposed issuance of the amendment. The State official had no comments.

8.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has made a final no significant hazards consideration finding with respect to this amendment. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

9.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: S. Hoffman
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Date: June 4, 1991