

October 24, 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:

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*A. TOALSTON; D. LASHER*

The Commission has issued the enclosed Amendment No. 67 to Facility Operating License No. NPF-2 and Amendment No. 59 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 December 16, 1985, supplemented August 1, 1986.

The amendments revise Technical Specifications Limiting Conditions of Operation and Surveillance Requirements for the reactor trip breakers including the automatic shunt trip feature modifications. These modifications resulted from the Commission staff's Generic Letter 83-28 for Item 4.3 dated July 8, 1983.

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,

*151*

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

Enclosures:

1. Amendment No. 67 to NPF-2
2. Amendment No. 59 to NPF-8
3. Safety Evaluation

cc: w/enclosures  
See next page

LA:PAD#2  
D. Miller  
10/8/86

PM:PAD#2  
E. Reeves:hc  
10/8/86

OGC  
APH  
10/11/86

PD:PAD#2  
L. Rubenstein  
10/9/86

*no legal objection*



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

October 24, 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:

The Commission has issued the enclosed Amendment No. 67 to Facility Operating License No. NPF-2 and Amendment No. 59 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 December 16, 1985, supplemented August 1, 1986.

The amendments revise Technical Specifications Limiting Conditions of Operation and Surveillance Requirements for the reactor trip breakers including the automatic shunt trip feature modifications. These modifications resulted from the Commission staff's Generic Letter 83-28 for Item 4.3 dated July 8, 1983.

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,

A handwritten signature in cursive script, reading "Edward A. Reeves".

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

Enclosures:

1. Amendment No. 67 to NPF-2
2. Amendment No. 59 to NPF-8
3. Safety Evaluation

cc: w/enclosures  
See next page

Mr. R. P. McDonald  
Alabama Power Company

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. 67  
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 December 16, 1985, supplemented August 1, 1986, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 67, 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 and shall be implemented within 30 days of receipt of this amendment.

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: October 24, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 67

TO 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 pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

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### 3/4.3 INSTRUMENTATION

#### 3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

##### LIMITING CONDITION FOR OPERATION

---

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

##### ACTION:

As shown in Table 3.3-1.

##### SURVEILLANCE REQUIREMENTS

---

4.3.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

TABLE 3.3-1  
REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Manual Reactor Trip	2	1	2	1, 2 3*, 4*, 5*	12 13
2. Power Range, Neutron Flux					
A. High	4	2	3	1, 2	2#
B. Low	4	2	3	2	2#
3. Power Range, Neutron Flux, High Positive Rate	4	2	3	1, 2	2#
4. Power Range, Neutron Flux, High Negative Rate	4	2	3	1, 2	2#
5. Intermediate Range, Neutron Flux	2	1	2	1, 2, and *	3####
6. Source Range, Neutron Flux					
A. Startup	2	1	2	2##, and *	4
B. Shutdown	2	0	1###	3, 4 and 5	5
7. Overtemperature $\Delta T$					
Three Loop Operation	3	2	2	1, 2	7#
Two Loop Operation	3	1**	2	1, 2	9
8. Overpower $\Delta T$					
Three Loop Operation	3	2	2	1, 2	7#
Two Loop Operation	3	1**	2	1, 2	9
9. Pressurizer Pressure-Low	3	2	2	1	7#
10. Pressurizer Pressure--High	3	2	2	1, 2	7#



TABLE 3.3-1 (Continued)  
REACTOR TRIP SYSTEM INSTRUMENTATION

	<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
21.	Reactor Trip Breakers	2	1	2	1, 2 3*, 4*, 5*	1, 14 13
22.	Automatic Trip Logic	2	1	2	1, 2 3*, 4*, 5*	1 13

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.

TABLE 3.3-1 (Continued)

- ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hour.
- ACTION 12 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours, or be in HOT STANDBY within the next 6 hours.
- ACTION 13 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours, or open the Reactor Trip System breakers within the next hour.
- ACTION 14 - With one of the diverse trip features (undervoltage or shunt trip attachment) inoperable, the breaker may be considered OPERABLE provided that the diverse trip feature is restored to OPERABLE status within 48 hours, or declare the breaker inoperable and apply ACTION 1. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.

TABLE 3.3-2

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
1. Manual Reactor Trip	Not Applicable
2. Power Range, Neutron Flux	
a. High	< 0.5 seconds*
b. Low	Not Applicable
3. Power Range, Neutron Flux, High Positive Rate	Not Applicable
4. Power Range, Neutron Flux, High Negative Rate	≤ 0.5 seconds*
5. Intermediate Range, Neutron Flux	Not Applicable
6. Source Range, Neutron Flux	Not Applicable
7. Overtemperature ΔT	≤ 4.0 seconds*
8. Overpower ΔT	Not Applicable
9. Pressurizer Pressure--Low	≤ 2.0 seconds
10. Pressurizer Pressure--High	≤ 2.0 seconds
11. Pressurizer Water Level--High	Not Applicable

\*  
Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input of first electronic component in channel.

TABLE 3.3-2 (Continued)REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
12. A. Loss of Flow - Single Loop (Above P-8)	$\leq 1.0$ seconds
B. Loss of Flow - Two Loops (Above P-7 and below P-8)	$\leq 1.0$ seconds
13. Steam Generator Water Level--Low-Low	$\leq 2.0$ seconds
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	Not Applicable
15. Undervoltage-Reactor Coolant Pumps	$\leq 1.2$ seconds
16. Underfrequency-Reactor Coolant Pumps	$\leq 0.6$ seconds
17. Turbine Trip	
A. Low Auto Stop Oil Pressure	Not Applicable
B. Turbine Throttle Valve Closure	Not Applicable
18. Safety Injection Input from ESF	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable
20. Reactor Trip System Interlocks	Not Applicable
21. Reactor Trip Breakers	Not Applicable
22. Automatic Trip Logic	Not Applicable

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Manual Reactor Trip	N.A.	N.A.	R(11), S/U(1)(12)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux				
A. High	S	D(2), M(3) and Q(6)	M	1, 2
B. Low	S	D(2), M(3) and Q(6)	S/U(10)	2
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6)	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S(7)	R(6)	M and S/U(1)	2, 3, 4, 5, and *
7. Overtemperature $\Delta T$	S	R	M	1, 2
8. Overpower $\Delta T$	S	R	M	1, 2
9. Pressurizer Pressure-Low	S	R	M	1
10. Pressurizer Pressure--High	S	R	M	1, 2
11. Pressurizer Water Level--High	S	R	M	1
12. A. Loss of Flow - Single Loop	S	R	M	1
B. Loss of Flow - Two Loops	S	R	N.A.	1

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
13. Steam Generator Water Level-- Low-Low	S	R	M	1, 2
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	M	1, 2
15. Undervoltage - Reactor Coolant Pumps	N.A.	R	M	1
16. Underfrequency - Reactor Coolant Pumps	N.A.	R	M	1
17. Turbine Trip A. Low Auto Stop Oil Pressure B. Turbine Throttle Valve Closure	N.A. N.A.	N.A. N.A.	S/U(9)(1) S/U(9)(1)	N.A. N.A.
18. Safety Injection Input from ESF	N.A.	N.A.	M(4)	1, 2
19. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	1
20. Reactor Trip System Interlocks	N.A.	R	S/U(8)	1
21. Reactor Trip Breaker	N.A.	N.A.	M(5)(14)(15), S/U(1)(14)(15)	1, 2, 3*, 4*, 5*
22. Automatic Trip Logic	N.A.	N.A.	M(5)	1, 2, 3*, 4*, 5*
23. Reactor Trip Bypass Breaker	N.A.	N.A.	(13),R(11)	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

TABLE NOTATION

- \* - With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.
- (1) - If not performed in previous 7 days.
- (2) - Heat balance only, above 15% of RATED THERMAL POWER. Adjust channel if absolute difference is greater than 2 percent.
- (3) - Compare incore to excore axial flux difference every 31 EFPD. Recalibrate if the absolute difference is greater than or equal to 3 percent.
- (4) - Manual ESF functional input check every 18 months.
- (5) - Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.
- (6) - Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (7) - Below the P-6 (Block of Source Range Reactor Trip) setpoint.
- (8) - Logic only, if not performed in previous 92 days.
- (9) - CHANNEL FUNCTIONAL TEST will consist of verifying that each channel indicates a turbine trip prior to latching the turbine and indicates no turbine trip prior to P-9.
- (10) - If not performed in the previous 31 days.
- (11) - Independently verify OPERABILITY of the undervoltage and shunt trip circuitry for the Manual Reactor Trip Function.
- (12) - Verify reactor trip breaker and reactor trip bypass breaker open upon actuation of each Main Control Board handswitch.
- (13) - Local manual shunt trip prior to placing breaker in service. Local manual undervoltage trip prior to placing breaker in service.
- (14) - Undervoltage trip via Reactor Protection System.
- (15) - Local manual shunt trip.





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. 59  
License No. NPF-8

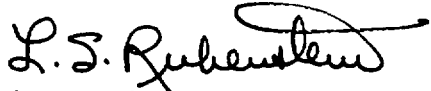
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Alabama Power Company (the licensee) dated December 16, 1985, supplemented August 1, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) 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. 59, 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 and shall be implemented within 30 days of receipt of this amendment.

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: October 24, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 59

TO FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages

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Insert Pages

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### 3/4.3 INSTRUMENTATION

#### 3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

##### LIMITING CONDITION FOR OPERATION

---

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

##### ACTION:

As shown in Table 3.3-1.

##### SURVEILLANCE REQUIREMENTS

---

4.3.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

TABLE 3.3-1  
REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Manual Reactor Trip	2	1	2	1, 2 3*, 4*, 5*	12 13
2. Power Range, Neutron Flux					
A. High	4	2	3	1, 2	2#
B. Low	4	2	3	2	2#
3. Power Range, Neutron Flux, High Positive Rate	4	2	3	1, 2	2#
4. Power Range, Neutron Flux, High Negative Rate	4	2	3	1, 2	2#
5. Intermediate Range, Neutron Flux	2	1	2	1, 2, and *	3####
6. Source Range, Neutron Flux					
A. Startup	2	1	2	2##, and *	4
B. Shutdown	2	0	1###	3, 4 and 5	5
7. Overtemperature $\Delta T$					
Three Loop Operation	3	2	2	1, 2	7#
Two Loop Operation	3	1**	2	1, 2	9
8. Overpower $\Delta T$					
Three Loop Operation	3	2	2	1, 2	7#
Two Loop Operation	3	1**	2	1, 2	9
9. Pressurizer Pressure-Low	3	2	2	1	7#
10. Pressurizer Pressure--High	3	2	2	1, 2	7#

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
17. Turbine Trip					7 <sup>#</sup>
A. Low Auto Stop Oil Pressure	3	2	2	1	7 <sup>#</sup>
B. Turbine Throttle Valve Closure	4	4	4	1	
18. Safety Injection Input from ESF	2	1	2	1, 2	1
19. Reactor Coolant Pump Breaker Position Trip					10 <sup>#</sup>
A. Above P-8	1/breaker	1	1/breaker	1	11 <sup>#</sup>
B. Above P-7	1/breaker	2	1/breaker per operating loop	1	
20. Reactor Trip System Interlocks					
A. Intermediate Range Neutron Flux, P-6	2	1	2	2, and*	8
B. Low Power Reactor Trips Block, P-7	P-10 Input 4 P-13 Input 2	2 1	3 2	1 1	8 8
C. Power Range Neutron Flux, P-8	4	2	3	1	8
D. Power Range Neutron Flux, P-10 (Input to P-7)	4	2	3	1, 2	8
E. Turbine Impulse Chamber Pressure, P-13	2	1	2	1	8
F. Power Range Neutron Flux, P-9	4	2	3	1	8

TABLE 3.3-1 (Continued)  
REACTOR TRIP SYSTEM INSTRUMENTATION

	<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
21.	Reactor Trip Breakers	2	1	2	1, 2 3*, 4*, 5*	1, 14 13
22.	Automatic Trip Logic	2	1	2	1, 2 3*, 4*, 5*	1 13

TABLE 3.3-1 (Continued)

- ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hour.
- ACTION 12 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours, or be in HOT STANDBY within the next 6 hours.
- ACTION 13 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours, or open the Reactor Trip System breakers within the next hour.
- ACTION 14 - With one of the diverse trip features (undervoltage or shunt trip attachment) inoperable, the breaker may be considered OPERABLE provided that the diverse trip feature is restored to OPERABLE status within 48 hours, or declare the breaker inoperable and apply ACTION 1. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.



TABLE 3.3-2

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
1. Manual Reactor Trip	Not Applicable
2. Power Range, Neutron Flux	
a. High	< 0.5 seconds*
b. Low	Not Applicable
3. Power Range, Neutron Flux, High Positive Rate	Not Applicable
4. Power Range, Neutron Flux, High Negative Rate	≤ 0.5 seconds*
5. Intermediate Range, Neutron Flux	Not Applicable
6. Source Range, Neutron Flux	Not Applicable
7. Overtemperature $\Delta T$	≤ 4.0 seconds*
8. Overpower $\Delta T$	Not Applicable
9. Pressurizer Pressure--Low	≤ 2.0 seconds
10. Pressurizer Pressure--High	≤ 2.0 seconds
11. Pressurizer Water Level--High	Not Applicable

\* Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input of first electronic component in channel.

TABLE 3.3-2 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
12. A. Loss of Flow - Single Loop (Above P-8)	$\leq 1.0$ seconds
B. Loss of Flow - Two Loops (Above P-7 and below P-8)	$\leq 1.0$ seconds
13. Steam Generator Water Level--Low-Low	$\leq 2.0$ seconds
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	Not Applicable
15. Undervoltage-Reactor Coolant Pumps	$\leq 1.2$ seconds
16. Underfrequency-Reactor Coolant Pumps	$\leq 0.6$ seconds
17. Turbine Trip	
A. Low Auto Stop Oil Pressure	Not Applicable
B. Turbine Throttle Valve Closure	Not Applicable
18. Safety Injection Input from ESF	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable
20. Reactor Trip System Interlocks	Not Applicable
21. Reactor Trip Breakers	Not Applicable
22. Automatic Trip Logic	Not Applicable

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Manual Reactor Trip	N.A.	N.A.	R(11), S/U(1)(12)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux				
A. High	S	D(2), M(3) and Q(6)	M	1, 2
B. Low	S	D(2), M(3) and Q(6)	S/U(10)	2
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6)	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S(7)	R(6)	M and S/U(1)	2, 3, 4, 5, and *
7. Overtemperature $\Delta T$	S	R	M	1, 2
8. Overpower $\Delta T$	S	R	M	1, 2
9. Pressurizer Pressure-Low	S	R	M	1
10. Pressurizer Pressure--High	S	R	M	1, 2
11. Pressurizer Water Level--High	S	R	M	1
12. A. Loss of Flow - Single Loop	S	R	M	1
B. Loss of Flow - Two Loops	S	R	N.A.	1

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
13. Steam Generator Water Level-- Low-Low	S	R	M	1, 2
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	M	1, 2
15. Undervoltage - Reactor Coolant Pumps	N.A.	R	M	1
16. Underfrequency - Reactor Coolant Pumps	N.A.	R	M	1
17. Turbine Trip A. Low Auto Stop Oil Pressure B. Turbine Throttle Valve Closure	N.A. N.A.	N.A. N.A.	S/U(9)(1) S/U(9)(1)	N.A. N.A.
18. Safety Injection Input from ESF	N.A.	N.A.	M(4)	1, 2
19. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	1
20. Reactor Trip System Interlocks	N.A.	R	S/U(8)	1
21. Reactor Trip Breaker	N.A.	N.A.	M(5)(14)(15), S/U(1)(14)(15)	1, 2, 3*, 4*, 5*
22. Automatic Trip Logic	N.A.	N.A.	M(5)	1, 2, 3*, 4*, 5*
23. Reactor Trip Bypass Breaker	N.A.	N.A.	(13), R(11)	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

TABLE NOTATION

- \* - With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.
- (1) - If not performed in previous 7 days.
- (2) - Heat balance only, above 15% of RATED THERMAL POWER. Adjust channel if absolute difference is greater than 2 percent.
- (3) - Compare incore to excore axial flux difference every 31 EFPD. Recalibrate if the absolute difference is greater than or equal to 3 percent.
- (4) - Manual ESF functional input check every 18 months.
- (5) - Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.
- (6) - Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (7) - Below the P-6 (Block of Source Range Reactor Trip) setpoint.
- (8) - Logic only, if not performed in previous 92 days.
- (9) - CHANNEL FUNCTIONAL TEST will consist of verifying that each channel indicates a turbine trip prior to latching the turbine and indicates no turbine trip prior to P-9.
- (10) - If not performed in the previous 31 days.
- (11) - Independently verify OPERABILITY of the undervoltage and shunt trip circuitry for the Manual Reactor Trip Function.
- (12) - Verify reactor trip breaker and reactor trip bypass breaker open upon actuation of each Main Control Board handswitch.
- (13) - Local manual shunt trip prior to placing breaker in service. Local manual undervoltage trip prior to placing breaker in service.
- (14) - Undervoltage trip via Reactor Protection System.
- (15) - Local manual shunt trip.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 67 TO FACILITY OPERATING LICENSE NO. NPF-2  
AND AMENDMENT NO. 59 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 December 16, 1985, supplemented August 1, 1986, Alabama Power Company proposed changes to the Technical Specifications (TS) pertaining to the reactor trip system instrumentation and surveillance in response to Generic Letter (GL) 85-09. GL 85-09 was a followup to GL 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." The NRC staff concluded in GL 85-09 that TS changes were needed although the licensee had not provided TS changes earlier per GL 83-28. The NRC staff concluded that TS changes should be proposed by all licensees to explicitly require independent testing of the undervoltage and shunt trip attachments of the reactor trip breakers during power operation, testing of bypass breakers prior to use, and independent testing of the control room manual reactor trip switch contacts during each refueling outage. Our evaluation follows.

EVALUATION

We have compared the licensee's proposed TS changes with the GL 85-09 model TS which were provided to all licensees. We had some concerns with the licensee's December 16, 1985, proposal. However, following discussions with the licensee's staff, a revised Table 3.3-1 was submitted by letter dated August 1, 1986, to resolve our concerns. The August 1, 1986, submittal provided supplemental information only and therefore did not change the determination of the initial Federal Register Notice.

A discussion of the proposed changes follows:

- 1) Table 3.3-1 (Reactor Trip System Instrumentation) contains changes for the Manual Reactor Trip (Functional Unit 1), the Reactor Trip Breakers (Functional Unit 21) and the Automatic Trip Logic (Functional Unit 22). Appropriate action statements are included for each limiting condition for operation. These changes conform to our guidance of GL 85-09 and are acceptable.
- 2) Table 4.3-1 (Reactor Trip System Instrumentation Surveillance Requirements) contains modifications to require verification of operability of the manual reactor trip circuits of the reactor trip breakers (RTBs) and the reactor

trip bypass breakers during refueling outages and prior to startup, including independent verification of the undervoltage and shunt trip circuitry. These changes conform to our guidance of GL 85-09 and are acceptable.

3) Table 4.3-1 contains modifications to require on-line testing of the RTBs including independent testing of the undervoltage and shunt trip functions for each train, and on-line testing of the automatic reactor trip logic channels, at least every 62 days on a staggered test basis. These changes conform to our guidance of GL 85-09 and are acceptable.

4) Table 4.3-1 requires testing of the reactor trip bypass breaker (including independent verification of the undervoltage and shunt trip circuitry and devices) prior to placing the breaker in service. This change conforms to our guidance of GL 85-09 and is acceptable.

#### SAFETY SUMMARY

The Joseph M. Farley Nuclear Plant Technical Specification changes as submitted by licensee letter dated December 16, 1985, and supplemented by licensee letter dated August 1, 1986, have been reviewed for consistency with the NRC staff guidance of Generic Letter 85-09. We find the proposed changes are acceptable.

#### ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20 and a surveillance requirement. The staff has determined that these amendments involve 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 previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet 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 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: October 24, 1986

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