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

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 106
License No. NPF-2

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern Nuclear Operating Company, Inc., dated October 14, 1993, 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. 106 , are hereby incorporated in the license. Southern Nuclear Operating Company, Inc., 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

William H. Bateman

William H. Bateman, 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: May 16, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 106

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. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 3-4	3/4 3-4
3/4 3-5	3/4 3-5
3/4 3-6	3/4 3-6
3/4 3-7	3/4 3-7
3/4 3-8	3/4 3-8
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3/4 3-16	3/4 3-16
3/4 3-17	3/4 3-17
3/4 3-19	3/4 3-19
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
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B3/4 3-1	B3/4 3-1

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
17. Turbine Trip					
A. Low Auto Stop Oil Pressure	3	2	2	1	7#
B. Turbine Throttle Valve Closure	4	4	1	1	6#
18. Safety Injection Input from ESF	2	1	2	1, 2	15
19. Reactor Coolant Pump Breaker Position Trip					
A. Above P-8	1/breaker	1	1/breaker	1	10
B. Above P-7	1/breaker	2	1/breaker per operating loop	1	11#
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	2	3	1	8
P-13 Input	2	1	2	1	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

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
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*	15 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 ≥ 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 6 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 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 3 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below the P-6 (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above the P-6 (Block of Source Range Reactor Trip) setpoint, but below 5% of RATED THERMAL POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 5% of RATED THERMAL POWER.

c. Above 5% of RATED THERMAL POWER, POWER OPERATION may continue.

ACTION 4 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below the P-6 (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above the P-6 (Block of Source Range Reactor Trip) setpoint, operation may continue.

ACTION 5 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, verify compliance with the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 or 3.1.1.2, as applicable, within 1 hour and at least once per 12 hours thereafter.

ACTION 6 - With the number of OPERABLE channels less than the Total Number of Channels, operation may continue provided the inoperable channels are placed in the tripped condition within 6 hours.

ACTION 7 - 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 6 hours, and

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1.

ACTION 8 - With the interlock inoperable to the extent that a reactor trip which should not be blocked in the current MODE is blocked, declare the trip function inoperable and follow the ACTION statements of Table 3.3-1 for the affected channel(s).

Interlock		Affected Channels on Table 3.3-1
1.	P-6	a. Source Range, Neutron Flux Startup Shutdown
2.	P-7	a. Low Reactor Coolant Loop Flow (2 loops) b. Undervoltage - Reactor Coolant Pumps c. Underfrequency - Reactor Coolant Pumps d. Pressurizer Low Pressure e. Pressurizer High Level
3.	P-8	a. Low Reactor Coolant Loop Flow (1 loop)
4.	P-9	a. Turbine Trip
5.	P-10	a. Intermediate Range, Neutron Flux b. Power Range, Neutron Flux - Low Setpoint c. Source Range, Neutron Flux Startup Shutdown d. P-7 (Item 2 above)
6.	P-13	a. P-7 (Item 2 above)

ACTION 9 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 6 hours or be in HOT STANDBY within the next 6 hours; however, one channel associated with an operating loop may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1.

ACTION 10 - With one channel inoperable, restore the inoperable channel to OPERABLE status within 6 hours or reduce THERMAL POWER to below the P-8 (Low Reactor Coolant Pump Flow and Reactor Coolant Pump Breaker Position) setpoint within the next 2 hours. Operation below the P-8 (Low Reactor Coolant Pump Flow and Reactor Coolant Pump Breaker Position) setpoint may continue pursuant to ACTION 11.

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 6 hours.

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.

ACTION 15 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1, provided the other channel is OPERABLE.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
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)	Q	1, 2	I
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)	Q	1, 2	I
4. Power Range, Neutron Flux, High Negative Rate	N.A	R(6)	Q	1, 2	I
5. Intermediate Range, Neutron Flux	S	R(6)	S/U(10)	1, 2 and *	I
6. Source Range, Neutron Flux	S(7)	R(6)	Q and S/U(10)	2, 3, 4, 5, and *	I
7. Overtemperature ΔT	S	R	Q	1, 2	
8. Overpower ΔT	S	R	Q	1, 2	
9. Pressurizer Pressure--Low	S	R	Q	1	
10. Pressurizer Pressure--High	S	R	Q	1, 2	
11. Pressurizer Water Level--High	S	R	Q	1	
12. A. Loss of Flow - Single Loop	S	R	Q	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	Q	1, 2	|
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	Q	1, 2	|
15. Undervoltage - Reactor Coolant Pumps	N.A.	R	Q	1	|
16. Underfrequency - Reactor Coolant Pumps	N.A.	R	Q	1	|
17. Turbine Trip					
A. Low Auto Stop Oil Pressure	N.A.	R	S/U(9)(10)	N.A.	|
B. Turbine Throttle Valve Closure	N.A.	R	S/U(9)(10)	N.A.	|
18. Safety Injection Input from ESF	N.A.	N.A.	R(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 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION					
a. Manual Initiation	2	1	2	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High	3	2	2	1, 2, 3	19*
d. Pressurizer Pressure--Low	3	2	2	1, 2, 3#	19*
e. Differential Pressure Between Steam Lines--High				1, 2, 3	
Three Loops Operating	3/steam line	2/steam line twice and 1/3 steam lines	2/steam line		19*
Two Loops Operating	3/operating steam line	2###/steam line twice in either operating steam line	2/operating steam line		15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
f. Steam Line Pressure--Low				1, 2, 3##	
Three Loops Operating	1 pressure/ loop	1 pressure any 2 loops	1 pressure any 2 loops		19*
Two Loops Operating	1 pressure/ loop	1### pressure in any operating loop	1 pressure any operating loop		15
2. CONTAINMENT SPRAY					
a. Manual	2	1	2	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High-High-High	4	2	3	1, 2, 3	16

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. STEAM LINE ISOLATION					
a. Manual	1/steam line	1/steam line	1/operating steam line	1, 2**, 3**	22
b. Automatic Actuation Logic	2	1	2	1, 2**, 3**	21
c. Containment Pressure--High-High	3	2	2	1, 2**, 3**	19*
d. Steam Flow in Two Steam Lines--High				1, 2**, 3**	
Three Loops Operating	2/steam line	1/steam line any 2 steam lines	1/steam line		19*
Two Loops Operating	2/operating steam line	1###/any operating steam line	1/operating steam line		15
COINCIDENT WITH T_{avg}--Low-Low				1, 2**, 3**	
Three Loops Operating	1 T_{avg}/loop	1 T_{avg} any 2 loops	1 T_{avg} any 2 loops		19*
Two Loops Operating	1 T_{avg}/operating loop	1### T_{avg} in any operating loop	1 T_{avg} in any operating loop		15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
e. Steam Line Pressure--Low				1, 2**, 3##,**	
Three Loops Operating	1 pressure/loop	1 pressure any 2 loops	1 pressure any 2 loops		19*
Two Loops Operating	1 pressure/operating loop	1### pressure in any operating loop	1 pressure any operating loop		15
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2	19*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
6. AUXILIARY FEEDWATER					
a. Automatic Actuation Logic	2	1	2	1, 2, 3	21
b. Stm. Gen. Water Level--Low-Low					
i. Start Motor-Driven Pumps	3/stm. gen.	2/stm. gen. any stm. gen.	2/stm. gen.	1, 2, 3	19*
ii. Start Turbine-Driven Pumps	3/stm. gen.	2/stm. gen. any 2 stm. gen.	2/stm. gen.	1, 2, 3	19*
c. Undervoltage-RCP Start Turbine-Driven Pump	3-2/bus	2	2	1	19
d. S.I. Start Motor-Driven Pumps	See 1 above (all S.I. initiating functions and requirements)				
e. Trip of Main Feedwater Pumps Start Motor-Driven Pumps	2/pump	1/pump	1/pump	1	23*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	24*
b. Grid Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	24*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	20
b. Low-Low T_{avg}, P-12	3	2	2	1, 2, 3	20
c. Steam Generator Level, P-14	(See 5.a above)				
d. Reactor Trip, P-4	2	1	2	1, 2, 3	13

TABLE 3.3-3 (Continued)

TABLE NOTATION

Trip function may be bypassed in this MODE below the P-11 (Pressurizer Pressure Block of Safety Injection) setpoint.

Trip function may be bypassed in this MODE below P-12 (T_{avg} Block of Safety Injection) setpoint.

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

* The provisions of Specification 3.0.4 are not applicable.

** Not applicable if main steam isolation valves are closed.

ACTION STATEMENTS

ACTION 13 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 14 - Deleted.

ACTION 15 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel associated with an operating loop may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition and the Minimum Channels OPERABLE requirement is met; one additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - 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 6 hours, and

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.2.1.

ACTION 20 - With the interlock inoperable to the extent that a safeguards function which should not be blocked in the current MODE is blocked, declare the safeguard function(s) inoperable and follow the appropriate ACTION statement(s) of Table 3.3-3 for the affected function(s).

Interlock		Affected Channels on Table 3.3-3
1.	P-11	a. Pressurizer Pressure--Low
2.	P-12	a. Steam Line Pressure--Low b. Steam Flow in Two Steam Lines High Coincident with T_{avg}--Low-Low

ACTION 21 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing provided the other channel is OPERABLE.

ACTION 22 - With the number of OPERABLE Channels one less than the Total Number of Channels restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

ACTION 23 - With the number of OPERABLE Channels one less than the Minimum Number of Channels, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST.

ACTION 24 - 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 6 hours, and

b. The Minimum Channel OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels per Specification 4.3.2.1.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION					
a. Manual Initiation	N.A.	N.A.	R(1)	1, 2, 3, 4	|
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
c. Containment Pressure--High	S	R	Q	1, 2, 3	|
d. Pressurizer Pressure--Low	S	R	Q	1, 2, 3	|
e. Differential Pressure Between Steam Lines--High	S	R	Q	1, 2, 3	|
f. Steam Line Pressure--Low	S	R	Q	1, 2, 3	|
2. CONTAINMENT SPRAY					
a. Manual Initiation	N.A.	N.A.	R(1)	1, 2, 3, 4	|
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
c. Containment Pressure--High-High-High	S	R	Q	1, 2, 3	|

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) From Safety Injection Automatic Actuation Logic	N.A	N.A.	M(2)	1, 2, 3, 4	
b. Phase "B" Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
3) Containment Pressure--High-High-High	S	R	Q	1, 2, 3	|
c. Purge and Exhaust Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
4. STEAM LINE ISOLATION					
a. Manual	N.A.	N.A.	R(1)	1, 2, 3	
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3	
c. Containment Pressure--High-High	S	R	Q	1, 2, 3	
d. Steam Flow in Two Steam Lines--High Coincident with T_{avg}--Low-Low	S	R	Q	1, 2, 3	
e. Steam Line Pressure--Low	S	R	Q	1, 2, 3	
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	Q	1, 2, 3	

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
6. AUXILIARY FEEDWATER					
a. Automatic Actuation Logic	N.A.	N.A.	M(2)(6)	1, 2, 3	
b. Steam Generator Water Level--Low-Low	S	R	Q	1, 2, 3	|
c. Undervoltage - RCP	N.A.	R	Q	1	|
d. S.I.	See 1 above (all SI surveillance requirements)				
e. Trip of Main Feedwater Pumps	N.A.	N.A.	S/U(5)	1	
7. LOSS OF POWER					
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	N.A.	R(3)	M(4)	1, 2, 3, 4	
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	N.A.	R(3)	M(4)	1, 2, 3, 4	
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS	N.A.	R	N.A.	N.A.	|

TABLE 4.3-2 (Continued)

TABLE NOTATION

(1) Manual actuation switches shall be tested at least once per 18 months during shutdown.

(2) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(3) Channel calibration shall exclude actuation of the final trip actuation relay.*

(4) Functional testing shall consist of verification of relay operation upon removal of input voltage and operation of 2-out-of-3 logic excluding the final trip actuation relay.*

(5) If not performed in the previous 92 days.

(6) Excluding automatic actuation logic for trip of main feedwater pumps.

*Actuation of the final trip actuation relay shall be included in response time testing.

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip and Engineered Safety Feature Actuation System instrumentation and interlocks ensures that 1) the associated Engineered Safety Feature Actuation action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic and sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance consistent with maintaining an appropriate level of reliability of the Reactor Trip System and Engineered Safety Feature Actuation System instrumentation and, 3) sufficient system functional capability is available for protective and ESF purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses. The surveillance requirements specified for these systems ensure that the overall system functional capa- bility is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and supplements to that report as approved by the NRC and documented in the SERs and SSER (letters to J. J. Sheppard from Cecil O. Thomas dated February 21, 1985; Roger A. Newton from Charles E. Rossi dated February 22, 1989; and Gerard T. Goering from Charles E. Rossi dated April 30, 1990).

The Engineered Safety Feature Actuation System interlocks perform the functions indicated below on increasing the required parameter, consistent with the setpoints listed in Table 3.3-4:

P-11 Defeats the manual block of safety injection actuation on low pressurizer pressure.

P-12 Defeats the manual block of safety injection actuation on low steam line pressure.

P-14 Trip of all feedwater pumps, turbine trip, closure of feedwater isolation valves and inhibits feedwater control valve modulation.

On decreasing the required parameter the opposite function is performed at reset setpoints, with the exception of P-12 as noted below:

P-12 Allows manual block of safety injection actuation on low steam line pressure. Causes steam line isolation on high steam flow. Affects steam dump blocks (i.e., prevents premature block of the noted function).

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

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99
License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern Nuclear Operating Company, Inc., dated October 14, 1993, 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-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. 99 , are hereby incorporated in the license. Southern Nuclear Operating Company, Inc., 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

William H. Bateman

William H. Bateman, 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: May 16, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 99

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. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 3-4	3/4 3-4
3/4 3-5	3/4 3-5
3/4 3-6	3/4 3-6
3/4 3-7	3/4 3-7
3/4 3-8	3/4 3-8
3/4 3-9	3/4 3-9
3/4 3-12	3/4 3-12
3/4 3-13	3/4 3-13
3/4 3-16	3/4 3-16
3/4 3-17	3/4 3-17
3/4 3-19	3/4 3-19
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 3-22	3/4 3-22
3/4 3-23	3/4 3-23
3/4 3-24	3/4 3-24
3/4 3-33	3/4 3-33
3/4 3-34	3/4 3-34
3/4 3-35	3/4 3-35
3/4 3-36	3/4 3-36
3/4 3-37	3/4 3-37
B3/4 3-1	B3/4 3-1

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
17. Turbine Trip					
A. Low Auto Stop Oil Pressure	3	2	2	1	7#
B. Turbine Throttle Valve Closure	4	4	1	1	6#
18. Safety Injection Input from ESF	2	1	2	1, 2	15
19. Reactor Coolant Pump Breaker Position Trip					
A. Above P-8	1/breaker	1	1/breaker	1	10
B. Above P-7	1/breaker	2	1/breaker per operating loop	1	11#
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	2	3	1	8
P-13 Input	2	1	2	1	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

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
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*	15 13

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 ≥ 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 6 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 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.

ACTION 3 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below the P-6 (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above the P-6 (Block of Source Range Reactor Trip) setpoint, but below 5% of RATED THERMAL POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 5% of RATED THERMAL POWER.

c. Above 5% of RATED THERMAL POWER, POWER OPERATION may continue.

ACTION 4 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below the P-6 (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above the P-6 (Block of Source Range Reactor Trip) setpoint, operation may continue.

ACTION 5 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, verify compliance with the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 or 3.1.1.2, as applicable, within 1 hour and at least once per 12 hours thereafter.

ACTION 6 - With the number of OPERABLE channels less than the Total Number of Channels, operation may continue provided the inoperable channels are placed in the tripped condition within 6 hours.

ACTION 7 - 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 6 hours, and

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1.

ACTION 8 - With the interlock inoperable to the extent that a reactor trip which should not be blocked in the current MODE is blocked, declare the trip function inoperable and follow the ACTION statements of Table 3.3-1 for the affected channel(s).

Interlock		Affected Channels on Table 3.3-1
1.	P-6	a. Source Range, Neutron Flux Startup Shutdown
2.	P-7	a. Low Reactor Coolant Loop Flow (2 loops) b. Undervoltage - Reactor Coolant Pumps c. Underfrequency - Reactor Coolant Pumps d. Pressurizer Low Pressure e. Pressurizer High Level
3.	P-8	a. Low Reactor Coolant Loop Flow (1 loop)
4.	P-9	a. Turbine Trip
5.	P-10	a. Intermediate Range, Neutron Flux b. Power Range, Neutron Flux - Low Setpoint c. Source Range, Neutron Flux Startup Shutdown d. P-7 (Item 2 above)
6.	P-13	a. P-7 (Item 2 above)

ACTION 9 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 6 hours or be in HOT STANDBY within the next 6 hours; however, one channel associated with an operating loop may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1.

ACTION 10 - With one channel inoperable, restore the inoperable channel to OPERABLE status within 6 hours or reduce THERMAL POWER to below the P-8 (Low Reactor Coolant Pump Flow and Reactor Coolant Pump Breaker Position) setpoint within the next 2 hours. Operation below the P-8 (Low Reactor Coolant Pump Flow and Reactor Coolant Pump Breaker Position) setpoint may continue pursuant to ACTION 11.

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 6 hours.

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.

ACTION 15 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1, provided the other channel is OPERABLE.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
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)	Q	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)	Q	1, 2	|
4. Power Range, Neutron Flux, High Negative Rate	N.A	R(6)	Q	1, 2	|
5. Intermediate Range, Neutron Flux	S	R(6)	S/U(10)	1, 2 and *	|
6. Source Range, Neutron Flux	S(7)	R(6)	Q and S/U(10)	2, 3, 4, 5, and *	|
7. Overtemperature ΔT	S	R	Q	1, 2	
8. Overpower ΔT	S	R	Q	1, 2	
9. Pressurizer Pressure--Low	S	R	Q	1	
10. Pressurizer Pressure--High	S	R	Q	1, 2	
11. Pressurizer Water Level--High	S	R	Q	1	
12. A. Loss of Flow - Single Loop	S	R	Q	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	Q	1, 2	|
14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	Q	1, 2	|
15. Undervoltage - Reactor Coolant Pumps	N.A.	R	Q	1	|
16. Underfrequency - Reactor Coolant Pumps	N.A.	R	Q	1	|
17. Turbine Trip					
A. Low Auto Stop Oil Pressure	N.A.	R	S/U(9)(10)	N.A.	|
B. Turbine Throttle Valve Closure	N.A.	R	S/U(9)(10)	N.A.	|
18. Safety Injection Input from ESF	N.A.	N.A.	R(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 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION					
a. Manual Initiation	2	1	2	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High	3	2	2	1, 2, 3	19*
d. Pressurizer Pressure--Low	3	2	2	1, 2, 3#	19*
e. Differential Pressure Between Steam Lines--High				1, 2, 3	
Three Loops Operating	3/steam line	2/steam line twice and 1/3 steam lines	2/steam line		19*
Two Loops Operating	3/operating steam line	2###/steam line twice in either operating steam line	2/operating steam line		15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
f. Steam Line Pressure--Low				1, 2, 3##	
Three Loops Operating	1 pressure/ loop	1 pressure any 2 loops	1 pressure any 2 loops		19*
Two Loops Operating	1 pressure/ loop	1### pressure in any operating loop	1 pressure any operating loop		15
2. CONTAINMENT SPRAY					
a. Manual	2	1	2	1, 2, 3, 4	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High-High-High	4	2	3	1, 2, 3	16

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. STEAM LINE ISOLATION					
a. Manual	1/steam line	1/steam line	1/operating steam line	1, 2**, 3**	22
b. Automatic Actuation Logic	2	1	2	1, 2**, 3**	21
c. Containment Pressure--High-High	3	2	2	1, 2**, 3**	19*
d. Steam Flow in Two Steam Lines--High				1, 2**, 3**	
Three Loops Operating	2/steam line	1/steam line any 2 steam lines	1/steam line		19*
Two Loops Operating	2/operating steam line	1###/any operating steam line	1/operating steam line		15
COINCIDENT WITH T_{avg}--Low-Low				1, 2**, 3**	
Three Loops Operating	1 T_{avg}/loop	1 T_{avg} any 2 loops	1 T_{avg} any 2 loops		19*
Two Loops Operating	1 T_{avg}/operating loop	1### T_{avg} in any operating loop	1 T_{avg} in any operating loop		15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
e. Steam Line Pressure--Low				1, 2**, 3##,**	
Three Loops Operating	1 pressure/loop	1 pressure any 2 loops	1 pressure any 2 loops		19*
Two Loops Operating	1 pressure/operating loop	1### pressure in any operating loop	1 pressure any operating loop		15
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2	19*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION	
6. AUXILIARY FEEDWATER						
a. Automatic Actuation Logic	2	1	2	1, 2, 3	21	
b. Stm. Gen. Water Level--Low-Low						
i. Start Motor-Driven Pumps	3/stm. gen.	2/stm. gen. any stm. gen.	2/stm. gen.	1, 2, 3	19*	|
ii. Start Turbine-Driven Pumps	3/stm. gen.	2/stm. gen. any 2 stm. gen.	2/stm. gen.	1, 2, 3	19*	|
c. Undervoltage-RCP Start Turbine-Driven Pump	3-2/bus	2	2	1	19	|
d. S.I. Start Motor-Driven Pumps	See 1 above (all S.I. initiating functions and requirements)					
e. Trip of Main Feedwater Pumps Start Motor-Driven Pumps	2/pump	1/pump	1/pump	1	23*	

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	24*
b. Grid Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	24*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	20
b. Low-Low T_{avg}, P-12	3	2	2	1, 2, 3	20
c. Steam Generator Level, P-14	(See 5.a above)				
d. Reactor Trip, P-4	2	1	2	1, 2, 3	13

TABLE NOTATION

\# Trip function may be bypassed in this MODE below the P-11 (Pressurizer Pressure Block of Safety Injection) setpoint.

Trip function may be bypassed in this MODE below P-12 (T_{avg} Block of Safety Injection) setpoint.

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

* The provisions of Specification 3.0.4 are not applicable.

** Not applicable if main steam isolation valves are closed.

ACTION STATEMENTS

ACTION 13 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 14 - Deleted.

ACTION 15 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel associated with an operating loop may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition and the Minimum Channels OPERABLE requirement is met; one additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - 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 6 hours, and

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.2.1.

ACTION 20 - With the interlock inoperable to the extent that a safeguards function which should not be blocked in the current MODE is blocked, declare the safeguard function(s) inoperable and follow the appropriate ACTION statement(s) of Table 3.3-3 for the affected function(s).

Interlock		Affected Channels on Table 3.3-3
1.	P-11	a. Pressurizer Pressure--Low
2.	P-12	a. Steam Line Pressure--Low b. Steam Flow in Two Steam Lines High Coincident with T_{avg}--Low-Low

ACTION 21 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing provided the other channel is OPERABLE.

ACTION 22 - With the number of OPERABLE Channels one less than the Total Number of Channels restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

ACTION 23 - With the number of OPERABLE Channels one less than the Minimum Number of Channels, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST.

ACTION 24 - 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 6 hours, and

b. The Minimum Channel OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels per Specification 4.3.2.1.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
1. SAFETY INJECTION, TURBINE TRIP AND FEEDWATER ISOLATION					
a. Manual Initiation	N.A.	N.A.	R(1)	1, 2, 3, 4	|
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
c. Containment Pressure--High	S	R	Q	1, 2, 3	|
d. Pressurizer Pressure--Low	S	R	Q	1, 2, 3	|
e. Differential Pressure Between Steam Lines--High	S	R	Q	1, 2, 3	|
f. Steam Line Pressure--Low	S	R	Q	1, 2, 3	|
2. CONTAINMENT SPRAY					
a. Manual Initiation	N.A.	N.A.	R(1)	1, 2, 3, 4	|
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
c. Containment Pressure--High-High-High	S	R	Q	1, 2, 3	|

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) From Safety Injection Automatic Actuation Logic	N.A	N.A.	M(2)	1, 2, 3, 4	
b. Phase "B" Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	
3) Containment Pressure--High-High-High	S	R	Q	1, 2, 3	|
c. Purge and Exhaust Isolation					
1) Manual	N.A.	N.A.	R(1)	1, 2, 3, 4	|
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4	

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
4. STEAM LINE ISOLATION					
a. Manual	N.A.	N.A.	R(1)	1, 2, 3	|
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3	
c. Containment Pressure--High-High	S	R	Q	1, 2, 3	|
d. Steam Flow in Two Steam Lines--High Coincident with T_{avg}--Low-Low	S	R	Q	1, 2, 3	|
e. Steam Line Pressure--Low	S	R	Q	1, 2, 3	|
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	Q	1, 2, 3	|

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED	
6. AUXILIARY FEEDWATER					
a. Automatic Actuation Logic	N.A.	N.A.	M(2)(6)	1, 2, 3	
b. Steam Generator Water Level--Low-Low	S	R	Q	1, 2, 3	|
c. Undervoltage - RCP	N.A.	R	Q	1	|
d. S.I.	See 1 above (all SI surveillance requirements)				
e. Trip of Main Feedwater Pumps	N.A.	N.A.	S/U(5)	1	
7. LOSS OF POWER					
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	N.A.	R(3)	M(4)	1, 2, 3, 4	
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	N.A.	R(3)	M(4)	1, 2, 3, 4	
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS	N.A.	R	N.A.	N.A.	|

TABLE 4.3-2 (Continued)

TABLE NOTATION

(1) Manual actuation switches shall be tested at least once per 18 months during shutdown.

(2) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(3) Channel calibration shall exclude actuation of the final trip actuation relay.*

(4) Functional testing shall consist of verification of relay operation upon removal of input voltage and operation of 2-out-of-3 logic excluding the final trip actuation relay.*

(5) If not performed in the previous 92 days.

(6) Excluding automatic actuation logic for trip of main feedwater pumps.

*Actuation of the final trip actuation relay shall be included in response time testing.

BASES

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip and Engineered Safety Feature Actuation System instrumentation and interlocks ensures that 1) the associated Engineered Safety Feature Actuation action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic and sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance consistent with maintaining an appropriate level of reliability of the Reactor Trip System and Engineered Safety Feature Actuation System instrumentation and, 3) sufficient system functional capability is available for protective and ESF purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses. The surveillance requirements specified for these systems ensure that the overall system functional capa- bility is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and supplements to that report as approved by the NRC and documented in the SERs and SSER (letters to J. J. Sheppard from Cecil O. Thomas dated February 21, 1985; Roger A. Newton from Charles E. Rossi dated February 22, 1989; and Gerard T. Goering from Charles E. Rossi dated April 30, 1990).

The Engineered Safety Feature Actuation System interlocks perform the functions indicated below on increasing the required parameter, consistent with the setpoints listed in Table 3.3-4:

P-11 Defeats the manual block of safety injection actuation on low pressurizer pressure.

P-12 Defeats the manual block of safety injection actuation on low steam line pressure.

P-14 Trip of all feedwater pumps, turbine trip, closure of feedwater isolation valves and inhibits feedwater control valve modulation.

On decreasing the required parameter the opposite function is performed at reset setpoints, with the exception of P-12 as noted below:

P-12 Allows manual block of safety injection actuation on low steam line pressure. Causes steam line isolation on high steam flow. Affects steam dump blocks (i.e., prevents premature block of the noted function).