UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 29, 1999

Mr. D. N. Morey
Vice President - Farley Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF AMENDMENTS RE: STEAM GENERATOR REPLACEMENTS (TAC NOS. MA4393 and MA4394)

Dear Mr. Morey:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 147 to Facility Operating License No. NPF-2 and Amendment No. 138 to Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2. The amendments change the Unit 1 and Unit 2 Improved Technical Specifications (ITS) in response to your application of December 1, 1998, as supplemented by your letters of April 21, July 19, October 18, and November 11, 1999. The amendments revise the ITS to address changes associated with replacing the current Westinghouse Model 51 steam generators with Westinghouse Model 54F steam generators. The Unit 1 ITS set applies after you replace the Unit 1 steam generators in spring 2000 until you replace the Unit 2 steam generators in spring 2001. The Unit 2 ITS set applies after you replace both the Unit 1 and the Unit 2 steam generators.

We are also enclosing a copy of our related safety evaluation. We will include a Notice of Issuance in the Commission's biweekly *Federal Register* Notice.

Sincerely,

L. Mark Padovan

L. Mark Padovan, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosures: 1. Amendment No. 147 to NPF-2
2. Amendment No. 138 to NPF-8
3. Safety Evaluation

cc w/ encls: See next page

ATTACHMENT 2

ATTACHMENT TO LICENSE AMENDMENT No. 138

TO FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

Replace the following pages of Facility Operating License No. NPF-8 with the attached revised pages. The revised pages are identified by amendment number and contain vertical lines indicating area of changes. Pages noted with an "*" have changed only due to information rolling over from one page to another.

Remove	Insert	Remove	Insert
3.3.1-17	3.3.1-17	B 3.6.5-3*	B 3.6.5-3*
3.3.2-11	3.3.2-11	B 3.6.6-3	B 3.6.6-3
3.4.5-2	3.4.5-2	B 3.7.16-1	B 3.7.16-1
B 3.4.5-5	B 3.4.5-5	5.5-5	5.5-5
B 3.4.5-6	B 3.4.5-6	5.5-6	5.5-6
3.4.6-2	3.4.6-2	5.5-7	5.5-7
B 3.4.6-5	B 3.4.6-5	5.5-8	5.5-8
3.4.7-1	3.4.7-1	5.5-9	5.5-9
3.4.7-2	3.4.7-2	5.5-10*	5.5-10
B 3.4.7-1	B 3.4.7-1	5.5-11	5.5-11
B 3.4.7-2	B 3.4.7-2	5.5-12*	5.5-12
B 3.4.7-4	B 3.4.7-4	5.5-13*	5.5-13
B 3.4.7-5	B 3.4.7-5	5.5-1	5.5-14
3.4.13-1	3.4.13-1	5.5-15*	5.5-15
B 3.4.13-2	B 3.4.13-2	5.5-16	5.5-16
B 3.4.13-3*	B 3.4.13-3*	5.5-17	5.5-17
B 3.4.13-4*	B 3.4.13-4*	5.5-18*	5.5-18
3.4.16-1	3.4.16-1	5.5-19	5.5-19
3.4.16-2	3.4.16-2	5.5-20	Delete
3.4.16-4	3.4.16-4	5.5-21	Delete
B 3.4.16-1	B 3.4.16-1	5.5-22	Delete
B 3.4.16-2	B 3.4.16-2	5.5-23	Delete
B 3.4.16-3	B 3.4.16-3	5.5-24	Delete
B 3.6.1-2	B 3.6.1-2	5.5-25	Delete
B 3.6.2-2	B 3.6.2-2	5.6-5	5.6-5
B 3.6.4-1	B 3.6.4-1	5.6-6	5.6-6
B 3.6.5-2	B 3.6.5-2		

Table 3.3.1-1 (page 4 of 8)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
11.	Reactor Coolant Pump (RCP) Breaker Position						
	a. Single Loop	1(g)	1 per RCP	N	SR 3.3.1.12	NA	NA
	b. Two Loops	1(h)	1 per RCP	M	SR 3.3.1.12	NA	NA
12.	Undervoltage RCPs	1(f)	3	M	SR 3.3.1.6 SR 3.3.1.10	≥ 2640 V	≥ 2680 V
13.	Underfrequency RCPs	1(f)	3	M	SR 3.3.1.6 SR 3.3.1.10	≥ 56.9 Hz	≥ 57 Hz
14.	Steam Generator (SG) Water Level — Low Low	1,2	3 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.14	≥ 27.6%	≥ 28%

(f) Above the P-7 (Low Power Reactor Trips Block) interlock.

(g) Above the P-8 (Power Range Neutron Flux) interlock.

(h) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.

Table 3.3.2-1 (page 4 of 4)
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
5.	Turbine Trip and Feedwater Isolation						
a.	Automatic Actuation Logic and Actuation Relays	1,2	2 trains	H	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.8	NA	NA
b.	SG Water Level - High High (P-14)	1,2	3 per SG	I	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9	≤ 82.4%	≤ 82%
c.	Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6.	Auxiliary Feedwater						
a.	Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	G	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.8	NA	NA
b.	SG Water Level - Low Low	1,2,3	3 per SG	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9[g]	≥ 27.6%	≥ 28%
c.	Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d.	Undervoltage Reactor Coolant Pump	1,2	3	I	SR 3.3.2.5 SR 3.3.2.7 SR 3.3.2.9	≥ 2640 volts	≥ 2680 volts
e.	Trip of all Main Feedwater Pumps	1	2 per pump	J	SR 3.3.2.10	NA	NA
7.	ESFAS Interlocks						
a.	Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	L	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.8	NA	NA
b.	Reactor Trip, P-4	1,2,3	1 per train, 2 trains	C	SR 3.3.2.6	NA	NA
c.	Pressurizer Pressure, P-11	1,2,3	3	K	SR 3.3.2.4 SR 3.3.2.7	≤ 2003 psig	≤ 2000 psig
d.	T_{avg} - Low Low, P-12 (Decreasing) (Increasing)	1,2,3	1 per loop	K	SR 3.3.2.4 SR 3.3.2.7	≥ 542.6°F ≤ 545.4°F	≥ 543°F ≤ 545°F

(g) Applicable to MDAFW pumps only.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One required RCS loop not in operation, and reactor trip breakers closed and Rod Control System capable of rod withdrawal.	C.1 Restore required RCS loop to operation. OR C.2 De-energize all control rod drive mechanisms (CRDMs).	1 hour 1 hour
D. Two required RCS loops inoperable. OR No RCS loop in operation.	D.1 De-energize all CRDMs. AND D.2 Suspend all operations involving a reduction of RCS boron concentration. AND D.3 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loops are in operation.	12 hours
SR 3.4.5.2	Verify steam generator secondary side water levels are ≥ 30% (narrow range) for required RCS loops.	12 hours
SR 3.4.5.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required RHR loop inoperable. AND Two required RCS loops inoperable.	B.1 Be in MODE 5.	24 hours
C. Required RCS or RHR loops inoperable. OR No RCS or RHR loop in operation.	C.1 Suspend all operations involving a reduction of RCS boron concentration. AND C.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RHR or RCS loop is in operation.	12 hours
SR 3.4.6.2	Verify SG secondary side water levels are ≥ 75% (wide range) for required RCS loops.	12 hours
SR 3.4.6.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops — MODE 5, Loops Filled

LCO 3.4.7 One residual heat removal (RHR) loop shall be OPERABLE and in operation, and either:

a. One additional RHR loop shall be OPERABLE; or

b. The secondary side water level of at least two steam generators (SGs) shall be ≥ 75% (wide range).

----------NOTES----------

1. The RHR pump of the loop in operation may not be in operation for ≤ 2 hours per 8 hour period provided:

   a. No operations are permitted that would cause reduction of the RCS boron concentration; and

   b. Core outlet temperature is maintained at least 10°F below saturation temperature.

2. One required RHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation.

3. No reactor coolant pump shall be started with one or more RCS cold leg temperatures ≤ 325°F unless:

   a. The secondary side water temperature of each SG is < 50°F above each of the RCS cold leg temperatures; or

   b. The pressurizer water volume is less than 770 cubic feet (24% of wide range, cold, pressurizer level indication).

4. All RHR loops may be removed from operation during planned heatup to MODE 4 when at least one RCS loop is in operation.

5. The number of operating Reactor Coolant Pumps is limited to one at RCS temperatures < 110°F with the exception that a second pump may be started for the purpose of maintaining continuous flow while taking the operating pump out of service.

APPLICABILITY: MODE 5 with RCS loops filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR loop inoperable. AND Required SGs secondary side water levels not within limits.	A.1 Initiate action to restore a second RHR loop to OPERABLE status. OR A.2 Initiate action to restore required SG secondary side water levels to within limits.	Immediately Immediately
B. Required RHR loops inoperable. OR No RHR loop in operation.	B.1 Suspend all operations involving a reduction of RCS boron concentration. AND B.2 Initiate action to restore one RHR loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify one RHR loop is in operation.	12 hours
SR 3.4.7.2	Verify SG secondary side water level is ≥ 75% (wide range) in required SGs.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS average temperature (T_{avg}) ≥ 500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 0.5 μCi/gm.	-------------------Note------------------ LCO 3.0.4 is not applicable. ---	
	A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.16-1.	Once per 4 hours
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. Gross specific activity of the reactor coolant not within limit.	B.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A not met. <u>OR</u> DOSE EQUIVALENT I-131 in the unacceptable region of Figure 3.4.16-1.	C.1	Be in MODE 3 with $T_{avg} < 500°F$.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	Verify reactor coolant gross specific activity ≤ 100/Ē μCi/gm.	7 days
SR 3.4.16.2	------------------------------NOTE------------------------------ Only required to be performed in MODE 1. -- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 0.5 μCi/gm.	14 days <u>AND</u> Between 2 and 6 hours after a THERMAL POWER change of ≥ 15% RTP within a 1 hour period

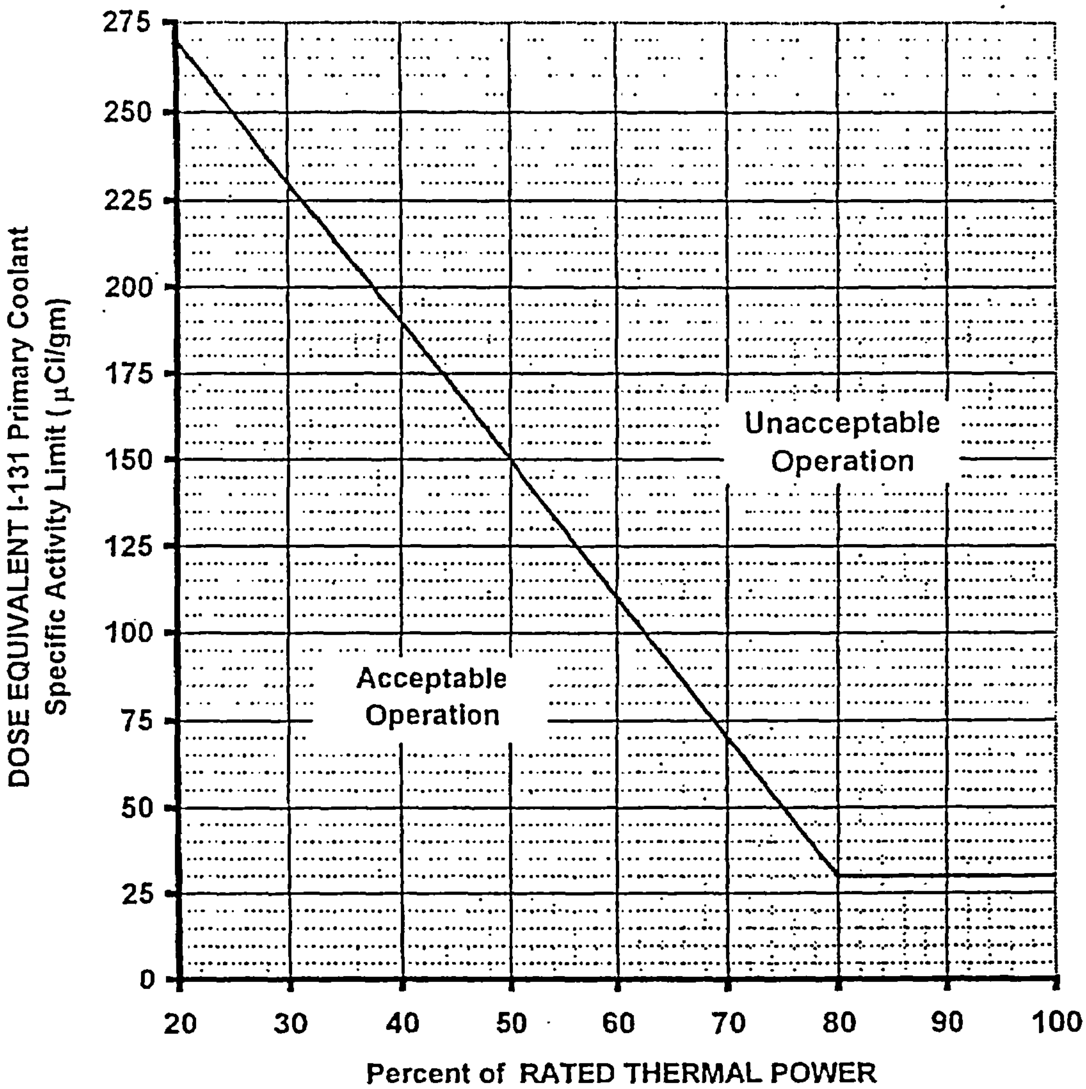

Figure 3.4.16-1

DOSE EQUIVALENT I-131 Primary Coolant Specific Activity Limit Versus Percent of RATED THERMAL POWER with the Primary Coolant Specific Activity > 0.5 μCi/gm DOSE EQUIVALENT I-131.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 30, 1999

Mr. D. N. Morey
Vice President - Farley Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF AMENDMENTS RE: CONVERSION TO IMPROVED STANDARD TECHNICAL SPECIFICATIONS (TAC NOS. MA1364 and MA1365)

Dear Mr. Morey:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 146 to Facility Operating License No. NPF-2 and Amendment No. 137 to Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2. The amendments change the Unit 1 and Unit 2 Technical Specifications (TS), TS Bases, and Facility Operating Licenses in response to your application of March 12, 1998, as supplemented by your following letters:

— April 24, 1998
— August 20, 1998
— November 20, 1998
— February 3, 1999
— February 20, 1999
— April 30, 1999 (two letters)
— May 28, 1999
— June 30, 1999
— July 27, 1999
— August 19, 1999
— August 30, 1999
— September 15, 1999
— September 23, 1999

The amendments fully convert your Current TS (CTS) to Improved TS (ITS) based on NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 1, of April 1995. The amendments add two new Additional Conditions to Appendix C of the Unit 1 and Unit 2 Facility Operating Licenses. The first new Additional Condition authorizes you to relocate certain CTS requirements to Southern Nuclear Operating Company-controlled documents. The second new condition addresses the schedule for performing new and revised ITS surveillances.

DF01

We have also enclosed a copy of our related safety evaluation. We will include a Notice of Issuance in the Commission's biweekly *Federal Register* Notice.

Sincerely,

Original signed by:
L. Mark Padovan, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosures: 1. Amendment No.146 to NPF-2
2. Amendment No.137 to NPF-8
3. Safety Evaluation
4. Notice of Issuance

cc w/encls: See next page

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SURVEILLANCE REQUREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.3	------------NOTES------------ 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.6. ------------------------------ Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 2700 kW and ≤ 2850 kW for the 2850 kW DG and ≥ 3875 kW and ≤ 4075 kW for the 4075 kW DGs.	31 days
SR 3.8.1.4	Verify each day tank contains ≥ 900 gal of fuel oil for the 4075 kW DGs and 700 gal of fuel oil for the 2850 kW DG.	31 days
SR 3.8.1.5	Verify the fuel oil transfer system operates to transfer fuel oil from storage tank to the day tank.	31 days
SR 3.8.1.6	------------NOTE------------ All DG starts may be preceded by an engine prelube period. ------------------------------ Verify each DG starts from standby condition and achieves in ≤ 12 seconds, voltage ≥ 3952 V and frequency ≥ 60 Hz.	184 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	-----------------------------NOTE----------------------------- This Surveillance shall not be performed in MODE 1 or 2. -- Verify manual transfer of AC power sources from the normal offsite circuit to the alternate required offsite circuit.	18 months
SR 3.8.1.8	Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the speed is $\leq$ 75% of the difference between nominal speed and the overspeed trip setpoint; and b. Following load rejection, the voltage is $\geq$ 3740 V and $\leq$ 4580 V.	18 months