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

August 29, 2000

Mr. John K. Wood
Vice President - Nuclear, Perry
FirstEnergy Nuclear Operating Company
P.O. Box 97, A200
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REVISIONS OF VARIOUS SURVEILLANCE REQUIREMENTS TO SUPPORT A 24-MONTH OPERATING CYCLE (TAC NO. MA5930)

Dear Mr. Wood:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. This amendment revises the Technical Specifications in response to your application dated June 17, 1999 (PY-CEI/NRR-2398L), as supplemented by submittals dated January 17 (PY-CEI/NRR-2449L), March 1 (PY-CEI/NRR-2468L), March 20 (PY-CEI/NRR-2479L), May 9 (PY-CEI/NRR-2484L), and August 21, 2000 (PY-CEI/NRR-2512L).

This amendment revises surveillance requirements to support a 24-month operating cycle.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Douglas V. Pickett

Douglas V. Pickett, Sr. Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures:
1. Amendment No. 115 to License No. NPF-58
2. Safety Evaluation

cc w/encls: See next page

cc:

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

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 115
License No. NPF-58

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

   A. The application for amendment by the FirstEnergy Nuclear Operating Company (the licensee) dated June 17, 1999, as supplemented by submittals dated January 17, March 1, March 20, May 9, and August 21, 2000, 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 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-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 115 are hereby incorporated into this license. The FirstEnergy Nuclear Operating Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and, with the exception of the new Allowable Values associated with the Loss of Power Instrumentation, shall be implemented not later than 90 days after issuance. The new Allowable Values shall be implemented prior to the end of the eighth refueling outage (RFO-8).

FOR THE NUCLEAR REGULATORY COMMISSION

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 29, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 115

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Replace the following pages of the Appendix "A" Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3.1-22	3.1-22
3.1-25	3.1-25
3.3-5	3.3-5
3.3-6	3.3-6
3.3-13	3.3-13
3.3-17	3.3-17
3.3-22	3.3-22
3.3-25	3.3-25
3.3-28	3.3-28
3.3-31	3.3-31
3.3-38	3.3-38
3.3-41	3.3-41
3.3-46	3.3-46
3.3-47	3.3-47
3.3-53	3.3-53
3.3-62	3.3-62
3.3-63	3.3-63
3.3-66	3.3-66
3.3-69	3.3-69
3.3-72	3.3-72
3.3-75	3.3-75
3.3-76	3.3-76
3.3-79	3.3-79
3.4-6	3.4-6
3.4-7	3.4-7
3.4-11	3.4-11
3.4-18	3.4-18
3.5-5	3.5-5
3.5-9	3.5-9
3.5-11	3.5-11
3.5-12	3.5-12
3.6-8	3.6-8
3.6-17	3.6-17
3.6-19	3.6-19
3.6-23	3.6-23

Remove (cont.)	Insert (cont.)
3.6-25	3.6-25
3.6-33	3.6-33
3.6-43	3.6-43
3.6-45	3.6-45
3.6-47	3.6-47
3.6-48	3.6-48
3.6-50	3.6-50
3.6-58	3.6-58
3.6-67	3.6-67
3.6-72	3.6-72
3.7-2	3.7-2
3.7-3	3.7-3
3.7-6	3.7-6
3.7-7	3.7-7
3.7-10	3.7-10
3.7-13	3.7-13
3.7-18	3.7-18
3.7-20	3.7-20
3.8-7	3.8-7
3.8-8	3.8-8
3.8-9	3.8-9
3.8-10	3.8-10
3.8-11	3.8-11
3.8-12	3.8-12
3.8-13	3.8-13
3.8-14	3.8-14
3.8-25	3.8-25
3.8-26	3.8-26

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.6	Verify each SLC subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position, or can be aligned to the correct position.	31 days
SR 3.1.7.7	Verify each pump develops a flow rate ≥ 32.4 gpm at a discharge pressure ≥ 1220 psig.	In accordance with the Inservice Testing Program
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	24 months on a STAGGERED TEST BASIS
SR 3.1.7.9	Verify all heat traced piping between storage tank and pump suction is unblocked.	24 months AND Once within 24 hours after pump suction piping temperature is restored to ≥ 70°F

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	----------NOTE---------- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. ---------- Verify each SDV vent and drain valve is open.	31 days
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	92 days
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in ≤ 30 seconds after receipt of an actual or simulated scram signal; and b. Opens when the actual or simulated scram signal is reset.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.11	----------NOTES---------- 1. Neutron detectors and flow reference transmitters are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.13	----------NOTES---------- 1. Neutron detectors are excluded. 2. For IRMs, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.14	Verify the APRM Flow Biased Simulated Thermal Power—High time constant is within the limits specified in the COLR.	24 months
SR 3.3.1.1.15	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.16	Verify Turbine Stop Valve Closure and Turbine Control Valve Fast Closure Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is ≥ 38% RTP.	24 months
SR 3.3.1.1.17	Calibrate flow reference transmitters.	24 months
SR 3.3.1.1.18	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Functions 3, 4 and 5 in Table 3.3.1.1-1, the channel sensors are excluded. 3. For Function 6, "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. ---------- Verify the RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.4	----------NOTE---------- Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. ---------- Verify count rate is: a. ≥ 3.0 cps, or b. ≥ 0.7 cps with a signal to noise ratio ≥ 2:1.	12 hours during CORE ALTERATIONS <u>AND</u> 24 hours
SR 3.3.1.2.5	----------NOTE---------- Not required to be performed until 12 hours after IRMs on Range 2 or below. ---------- Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.1.2.6	----------NOTES---------- 1. Neutron detectors are excluded. 2. Not required to be performed until 12 hours after IRMs on Range 2 or below. ---------- Perform CHANNEL CALIBRATION.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.4	----------NOTE---------- Not required to be performed until 1 hour after THERMAL POWER is ≤ 19% RTP in MODE 1. ---------- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.5	Calibrate the low power setpoint trip units. The Allowable Value shall be > 19% RTP and ≤ 33.3% RTP.	92 days
SR 3.3.2.1.6	Verify the RWL high power Function is not bypassed when THERMAL POWER is > 66.7% RTP.	92 days
SR 3.3.2.1.7	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.2.1.8	----------NOTE---------- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. ---------- Perform CHANNEL FUNCTIONAL TEST.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	----------NOTE---------- Applicable for each Function in Table 3.3.3.1-1 except Function 10. ---------- Perform CHANNEL CHECK.	31 days
SR 3.3.3.1.2	----------NOTE---------- Only applicable for Function 10 in Table 3.3.3.1-1. ---------- Perform CHANNEL CALIBRATION.	92 days
SR 3.3.3.1.3	----------NOTE---------- Applicable for each Function in Table 3.3.3.1-1 except Function 10. ---------- Perform CHANNEL CALIBRATION.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended functions.	24 months
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel, except valve position instrumentation.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. TSV Closure: ≤ 7% closed; and b. TCV Fast Closure, Trip Oil Pressure—Low: ≥ 465 psig.	24 months
SR 3.3.4.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	24 months
SR 3.3.4.1.4	Verify TSV Closure and TCV Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is ≥ 38% RTP.	24 months
SR 3.3.4.1.5	----------NOTE---------- Breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6. ---------- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.4.1.6	Determine RPT breaker arc suppression time.	60 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.2.3	Calibrate the trip unit.	92 days
SR 3.3.4.2.4	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level—Low Low, Level 2: ≥ 127.6 inches; and b. Reactor Vessel Pressure—High: ≤ 1098 psig.	24 months
SR 3.3.4.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	24 months

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c, 3.f, 3.g, and 3.h; and (b) for up to 6 hours for Functions other than 3.c, 3.f, 3.g, and 3.h, provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Calibrate the trip unit.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.5	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.5.1.7	Perform CHANNEL CALIBRATION.	6 months

Table 3.3.5.1-1 (page 3 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI B and LPCI C Subsystems (continued)					
e. LPCI Pump B and LPCI Pump C Discharge Flow — Low (Bypass)	1,2,3, 4(a),5(a)	1 per pump	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1450 gpm
f. Manual Initiation	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.6	NA
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level — Low Low, Level 2	1,2,3, 4(a),5(a)	4(e)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 127.6 inches
b. Drywell Pressure — High	1,2,3	4(e)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.88 psig
c. Reactor Vessel Water Level — High, Level 8	1,2,3, 4(a),5(a)	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 221.7 inches
d. Condensate Storage Tank Level — Low	1,2,3, 4(c),5(c)	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 90,300 gallons
e. Suppression Pool Water Level — High	1,2,3	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.6	≤ 18 ft 6 inches

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(c) When HPCS is OPERABLE for compliance with LCO 3.5.2, "ECCS — Shutdown," and aligned to the condensate storage tank while tank water level is not within the limits of SR 3.5.2.2.

(e) Also required to initiate the associated diesel generator.

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 5; and (b) for up to 6 hours for Functions 1, 2, 3, and 4 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.2.3	Calibrate the trip unit.	92 days
SR 3.3.5.2.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.5.2.6	Perform CHANNEL CALIBRATION.	6 months

Table 3.3.5.2-1 (page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level — Low Low, Level 2	4	B	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≥ 127.6 inches
2. Reactor Vessel Water Level — High, Level 8	4	C	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≤ 221.7 inches
3. Condensate Storage Tank Level — Low	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≥ 90,300 gallons
4. Suppression Pool Water Level — High	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.6 SR 3.3.5.2.5	≤ 18 ft 6 inches
5. Manual Initiation	1	C	SR 3.3.5.2.5	NA

SURVEILLANCE REQUIREMENTS

----------NOTES----------
1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.1.2	----------NOTE---------- For Function 1.e in Table 3.3.6.1-1, this SR is applicable only to the Division 3 and 4 instruments. ---------- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Calibrate the trip unit.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.6.1.6	----------NOTE---------- Channel sensors are excluded. ---------- Verify the ISOLATION SYSTEM RESPONSE TIME for the main steam isolation valves is within limits.	24 months on a STAGGERED TEST BASIS

(continued)

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each RHR Containment Spray System Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains RHR containment spray initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2.3	Calibrate the trip unit.	92 days
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.6.2.6	Perform CHANNEL CALIBRATION	92 days

Table 3.3.6.2-1 (page 1 of 1)
RHR Containment Spray System Instrumentation

FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Drywell Pressure - High	2	B	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 1.88 psig
2. Containment Pressure - High	1	C	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 8.71 psig
3. Reactor Vessel Water Level - Low Low Low, Level 1	2	B	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5	≥ 14.3 inches
4. System A and System B Timers	1	C	SR 3.3.6.2.2 SR 3.3.6.2.6 SR 3.3.6.2.5	≥ 10.25 minutes and ≤ 11.45 minutes
5. System B Timer	1	C	SR 3.3.6.2.2 SR 3.3.6.2.6 SR 3.3.6.2.5	≥ 32 seconds and ≤ 38 seconds
6. Manual Initiation	1	C	SR 3.3.6.2.5	NA

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.3-1 to determine which SRs apply for each SPMU Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains SPMU initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.3.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.3.3	Calibrate the trip unit.	92 days
SR 3.3.6.3.4	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.6.3.5	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.3.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

SURVEILLANCE REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains LLS or relief initiation capability, as applicable.

SURVEILLANCE		FREQUENCY
SR 3.3.6.4.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.4.2	Calibrate the trip unit.	92 days
SR 3.3.6.4.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Relief Function Low: 1103 ± 15 psig Medium: 1113 ± 15 psig High: 1123 ± 15 psig b. LLS Function Low open: 1033 ± 15 psig close: 926 ± 15 psig Medium open: 1073 ± 15 psig close: 936 ± 15 psig High open: 1113 ± 15 psig close: 946 ± 15 psig	24 months
SR 3.3.6.4.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CRER initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.7.1.3	Calibrate the trip unit.	92 days
SR 3.3.7.1.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.7.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains DG initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.8.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER DIVISION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage—4.16 kV basis	2/bus	SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2859 V and ≤ 3161 V
b. Loss of Voltage—Time Delay	2/bus	SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2.85 seconds and ≤ 3.15 seconds
c. Degraded Voltage—4.16 kV basis	2/bus	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3760 V and ≤ 3840 V
d. Degraded Voltage—Time Delay, No LOCA	2/bus	SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 180 seconds and ≤ 270 seconds[a]
e. Degraded Voltage—Time Delay, LOCA	2/bus	SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 9 seconds and ≤ 16.5 seconds

(a) The ALLOWABLE VALUE for FUNCTION 1.d may be ≥ 180 seconds and ≤ 330 seconds until the end of RF08.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	----------NOTE---------- Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for ≥ 24 hours. ---------- Perform CHANNEL FUNCTIONAL TEST.	184 days
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage Bus A ≤ 132 V Bus B ≤ 132 V b. Undervoltage Bus A ≥ 108 V Bus B ≥ 108 V c. Underfrequency (with time delay set to ≤ 4.0 seconds) Bus A ≥ 57 Hz Bus B ≥ 57 Hz	24 months
SR 3.3.8.2.3	Perform a system functional test.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Flow Control Valves (FCVs)

LCO 3.4.2 A recirculation loop FCV shall be OPERABLE in each operating recirculation loop.

APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each FCV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required FCVs inoperable.	A.1 Lock up the FCV.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify each FCV fails "as is" on loss of hydraulic pressure at the hydraulic unit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.2.2	Verify average rate of each FCV movement is: a. ≤ 11% of stroke per second for opening; and b. ≤ 11% of stroke per second for closing.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.4.2	----------NOTE---------- Valve actuation may be excluded. ---------- Verify each required relief function S/RV actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.4.4.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each required S/RV opens when manually actuated.	24 months on a STAGGERED TEST BASIS for each valve solenoid

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Perform CHANNEL CHECK of required drywell atmospheric monitoring system.	12 hours
SR 3.4.7.2	Perform CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	31 days
SR 3.4.7.3	Perform CHANNEL CALIBRATION of required leakage detection instrumentation.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.6	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the ADS actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.7	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each ADS valve opens when manually actuated.	24 months on a STAGGERED TEST BASIS for each valve solenoid
SR 3.5.1.8	----------NOTE---------- ECCS actuation instrumentation is excluded. ---------- Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limits.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	Verify each required ECCS pump develops the specified flow rate with sufficient pump total head to overcome the total system resistance which includes the specified reactor to containment wetwell differential pressure. SYSTEM — FLOW RATE — REACTOR TO CONTAINMENT WETWELL DIFFERENTIAL PRESSURE LPCS — ≥ 6110 gpm — ≥ 128 psid LPCI — ≥ 7100 gpm — ≥ 24 psid HPCS — ≥ 6110 gpm — ≥ 200 psid	In accordance with the Inservice Testing Program
SR 3.5.2.6	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	31 days
SR 3.5.3.2	Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with RCIC steam supply pressure ≥ 920 psig and ≤ 1045 psig, the RCIC pump can develop a flow rate ≥ 700 gpm against a system head corresponding to reactor pressure.	92 days
SR 3.5.3.4	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with RCIC steam supply pressure ≥ 150 psig and ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 700 gpm against a system head corresponding to reactor pressure.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	----------NOTE---------- Vessel injection may be excluded. ---------- Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.3	----------NOTE---------- Only required to be performed upon entry or exit through the primary containment air lock. ---------- Verify only one door in the primary containment air lock can be opened at a time.	184 days
SR 3.6.1.2.4	Verify, from an initial pressure of 90 psig, the primary containment air lock seal pneumatic system pressure does not decay at a rate equivalent to > 1.5 psig for a period of 24 hours.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	Verify the isolation time of each power operated and each automatic PCIV, except MSIVs, is within limits.	In accordance with the Inservice Testing Program
SR 3.6.1.3.6	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Perform leakage rate testing for each primary containment purge valve with resilient seals.	184 days AND Once within 92 days after opening the valve
SR 3.6.1.3.7	Verify the isolation time of each MSIV is ≥ 2.5 seconds, and ≤ 5 seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.11	----------NOTE---------- 1. Only required to be met in MODES 1, 2, and 3. 2. Feedwater lines are excluded. ---------- Verify combined leakage rate of 1 gpm times the total number of PCIVs through hydrostatically tested lines that penetrate the primary containment is not exceeded when these isolation valves are tested at $\geq 1.1\ P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.12	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify each outboard 42 inch primary containment purge valve is blocked to restrict the valve from opening > 50°.	24 months
SR 3.6.1.3.13	----------NOTE---------- Not required to be met when the Backup Hydrogen Purge System isolation valves are open for pressure control, ALARA or air quality considerations for personnel entry, or Surveillances or special testing of the Backup hydrogen Purge System that require the valves to be open. ---------- Verify each 2 inch Backup Hydrogen Purge System isolation valve is closed.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each LLS valve opens when manually actuated.	24 months on a STAGGERED TEST BASIS for each valve solenoid
SR 3.6.1.6.2	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the LLS function of the six safety/relief valves actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.1	----------NOTE---------- RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. ---------- Verify each RHR containment spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.1.7.2	Verify each RHR pump develops a flow rate of ≥ 5250 gpm on recirculation flow through the associated heat exchangers to the suppression pool.	In accordance with the Inservice Testing Program
SR 3.6.1.7.3	Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal.	24 months
SR 3.6.1.7.4	Verify each spray nozzle is unobstructed.	Following maintenance which could result in nozzle blockage.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.11.1	----------NOTES---------- 1. Not required to be met for vacuum breakers open during Surveillances. 2. Not required to be met for vacuum breakers open when performing their intended function. ---------- Verify each vacuum breaker is closed.	24 hours
SR 3.6.1.11.2	Perform a functional test of each required vacuum breaker and its associated isolation valve.	31 days
SR 3.6.1.11.3	Verify the opening pressure differential of each required vacuum breaker is ≤ 0.1 psid, and the opening setpoint of the vacuum breaker isolation valve is ≥ 0.052 psid and ≤ 0.160 psid.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.4.1	Verify upper containment pool water level is: a. ≥ 22 ft 9 inches above the reactor pressure vessel (RPV) flange, OR b. ≥ 22 ft 5 inches above the RPV flange, and suppression pool water level ≥ 17 ft 11.7 inches.	24 hours
SR 3.6.2.4.2	Verify upper containment pool water temperature is ≤ 110°F.	24 hours
SR 3.6.2.4.3	Verify each SPMU subsystem manual, power operated, and automatic valve that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.2.4.4	Verify all required upper containment pool gates are in the stored position or are otherwise removed from the upper containment pool.	31 days
SR 3.6.2.4.5	----------NOTE---------- Actual makeup to the suppression pool may be excluded. ---------- Verify each SPMU subsystem automatic valve actuates to the correct position on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1.1	Perform a system functional test for each primary containment hydrogen recombiner.	24 months
SR 3.6.3.1.2	Visually examine each primary containment hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions.	24 months
SR 3.6.3.1.3	Perform a resistance to ground test for each heater phase.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.1	Energize each primary containment and drywell hydrogen igniter division and perform current versus voltage measurements to verify required igniters in service.	184 days
SR 3.6.3.2.2	----------NOTE---------- Not required to be performed until 92 days after discovery of four or more igniters in the division inoperable. ---------- Energize each primary containment and drywell hydrogen igniter division and perform current versus voltage measurements to verify required igniters in service.	92 days
SR 3.6.3.2.3	Verify each required igniter in inaccessible areas develops sufficient current draw for a ≥ 1700°F surface temperature.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.4	Verify each required igniter in accessible areas develops a surface temperature of ≥ 1700°F.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.3.1	Operate each combustible gas mixing subsystem for ≥ 15 minutes.	92 days
SR 3.6.3.3.2	Verify each combustible gas mixing subsystem flow rate is ≥ 500 scfm.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each AEGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.3.2	Perform required AEGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each AEGT subsystem actuates on an actual or simulated initiation signal.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.3.1	Verify each 24 inch and 36 inch drywell purge supply and exhaust isolation valve is sealed closed.	31 days
SR 3.6.5.3.2	Deleted.	
SR 3.6.5.3.3	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for drywell isolation valves that are open under administrative controls. ---------- Verify each drywell isolation manual valve and blind flange that is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed in the previous 92 days
SR 3.6.5.3.4	Verify the isolation time of each power operated and each automatic drywell isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.5.3.5	Verify each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.6.1	----------NOTES---------- 1. Not required to be met for drywell vacuum breakers open during Surveillances. 2. Not required to be met for drywell vacuum breakers open when performing their intended function. ---------- Verify each drywell vacuum breaker and its associated isolation valve is closed.	7 days
SR 3.6.5.6.2	Perform a functional test of each drywell vacuum breaker and its associated isolation valve.	31 days
SR 3.6.5.6.3	Verify the opening pressure differential of each drywell vacuum breaker is ≤ 0.5 psid, and the allowable value of each associated isolation valve is ≤ 0.810 inches water gauge dp.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR Both ESW Division 1 and Division 2 subsystems inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify each required Division 1 and 2 ESW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.1.2	Verify each required Division 1 and 2 ESW subsystem actuates on an actual or simulated initiation signal.	24 months

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System—Division 3

LCO 3.7.2 The Division 3 ESW subsystem shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ESW Division 3 subsystem inoperable.	A.1 Declare High Pressure Core Spray System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify each required Division 3 ESW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.2.2	Verify the Division 3 ESW subsystem actuates on an actual or simulated initiation signal.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CRER subsystems inoperable during movement of recently irradiated fuel assemblies in the primary containment or fuel handling building, or during OPDRVs.	E.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel handling building.	Immediately
	AND	
	E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CRER subsystem for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CRER filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CRER subsystem actuates on an actual or simulated initiation signal.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.3.4	Verify leakage through the outside air intake and exhaust dampers is within limits.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition B not met during movement of recently irradiated fuel assemblies in the primary containment or fuel handling building, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	E.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel handling building.	Immediately
	AND	
	E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify each control room HVAC subsystem has the capability to remove the assumed heat load.	24 months

3.7 PLANT SYSTEMS

3.7.6 Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ 23.8% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Main Turbine Bypass System inoperable.	A.1 Restore Main Turbine Bypass System to OPERABLE status.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23.8% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each main turbine bypass valve.	31 days
SR 3.7.6.2	Perform a system functional test.	24 months
SR 3.7.6.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each FHB ventilation exhaust subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.7.9.2	Perform FHB ventilation exhaust filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Perform a system functional test.	24 months
SR 3.7.9.4	Perform a CHANNEL FUNCTIONAL TEST of the FHB ventilation exhaust radiation monitor (noble gas)	92 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify each required ECCW subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position.	31 days
SR 3.7.10.2	Verify each required ECCW automatic valve servicing safety related equipment actuates to the correct position on an actual or simulated actuation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts from standby conditions and achieves: a. For Division 1 and 2 DGs, voltage ≥ 3900 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz in ≤ 10 seconds; and b. For Division 3 DG: 1. Frequency ≥ 58.8 Hz in ≤ 10 seconds; and 2. Voltage ≥ 3900 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz in ≤ 13 seconds.	184 days
SR 3.8.1.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	----------NOTES---------- 1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. 2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load. Following load rejection, engine speed is maintained less than nominal plus 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal, whichever is less.	24 months
SR 3.8.1.10	----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ 0.9 does not trip and voltage is maintained ≤ 4784 V for Division 1 and 2 DGs and ≤ 5000 V for Division 3 DG during and following a load rejection of a load ≥ 5600 kW for Division 1 and 2 DGs and ≥ 2600 kW for Division 3 DG.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds for Division 1 and 2 DGs and ≤ 13 seconds for Division 3, 2. energizes auto-connected loads for Divisions 1 and 2, 3. maintains steady state voltage ≥ 3900 V and ≤ 4400 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected loads for ≥ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each DG auto-starts from standby condition and: a. In ≤ 10 seconds for Divisions 1 and 2, and ≤ 13 seconds for Division 3 after auto-start and during tests, achieves voltage ≥ 3900 V and ≤ 4400 V; b. In ≤ 10 seconds for Divisions 1 and 2, and ≤ 13 seconds for Division 3 after auto-start and during tests, achieves frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and c. Operates for ≥ 5 minutes.	24 months
SR 3.8.1.13	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except: a. Engine overspeed; and b. Generator differential current	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 6800 kW and ≤ 7000 kW for Division 1 and 2 DGs, and ≥ 2860 kW for Division 3 DG; and b. For the remaining hours of the test loaded ≥ 5600 kW and ≤ 7000 kW for Division 1 and 2 DGs, and ≥ 2600 kW for Division 3 DG.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 1 hour loaded ≥ 5600 kW and ≤ 7000 kW for Division 1 and 2 DGs, and ≥ 2600 kW for Division 3 DG. Momentary transients outside of the load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ 10 seconds for Divisions 1 and 2 and ≤ 13 seconds for Division 3, voltage ≥ 3900 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	24 months
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and b. Automatically energizing the emergency loads from offsite power.	24 months
SR 3.8.1.18	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify for Division 1 and 2 DGs, the sequence time is within ± 10% of design for each load sequence timer.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds for Divisions 1 and 2 and ≤ 13 seconds for Division 3, 2. energizes auto-connected emergency loads (for Division 3, verify energization in ≤ 13 seconds), 3. achieves steady state voltage ≥ 3900 V and ≤ 4400 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 129 V on float charge.	7 days
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance is ≤ 5.0 E-5 ohm for inter-cell connections, ≤ 5.0 E-5 ohm for inter-rack connections, ≤ 5.0 E-5 ohm for inter-tier connections, ≤ 5.0 E-5 ohm for terminal connections; for Div 1 and Div 2 and ≤ 1.0 E-4 ohm for inter-cell connections, ≤ 1.0 E-4 ohm for inter-rack connections, ≤ 1.0 E-4 ohm for inter-tier connections, ≤ 1.0 E-4 ohm for terminal connections. for Div 3.	92 days
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration.	24 months
SR 3.8.4.4	Remove visible corrosion, and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.5	Verify battery connection resistance is ≤ 5.0 E-5 ohm for inter-cell connections, ≤ 5.0 E-5 ohm for inter-rack connections, ≤ 5.0 E-5 ohm for inter-tier connections, ≤ 5.0 E-5 ohm for terminal connections; for Div 1 and Div 2 and ≤ 1.0 E-4 ohm for inter-cell connections, ≤ 1.0 E-4 ohm for inter-rack connections, ≤ 1.0 E-4 ohm for inter-tier connections, ≤ 1.0 E-4 ohm for terminal connections for Div 3.	24 months
SR 3.8.4.6	Verify each required Division 1 and 2 battery charger supplies ≥ 400 amps at ≥ 125 V for ≥ 8 hours; and each required Division 3 battery charger supplies ≥ 50 amps at ≥ 125 V for ≥ 8 hours.	24 months
SR 3.8.4.7	----------NOTE---------- SR 3.8.4.8 may be performed in lieu of SR 3.8.4.7 once per 60 months. ---------- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 months

(continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. NPF-58

FIRSTENERGY NUCLEAR OPERATING COMPANY

PERRY NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated June 17, 1999, and as supplemented by letters dated January 17, March 1, March 20, May 9, and August 21, 2000, the FirstEnergy Nuclear Operating Company (the licensee) submitted proposed revisions to the technical specifications to support a 24-month operating cycle. The licensee intends to implement the longer fuel cycle during the current, Cycle 8, operating cycle that began in May 1999. Therefore, the licensee has requested staff approval by October 1, 2000, which is approximately 18 months after the start of the current operating cycle.

The supplemental information contained clarifying information and did not change the initial no significant hazards consideration determination and did not expand the scope of the original Federal Register notice.

2.0 BACKGROUND

Improved reactor fuels allow licensees to consider increasing the duration of the fuel cycle for their facilities. The staff has reviewed and approved a number of requests to extend surveillance requirements to accommodate a 24-month fuel cycle. The staff has found that the effect on plant safety is small because safety systems use redundant electrical and mechanical components and because licensees perform other surveillances during plant operation that confirm that these systems and components can perform their safety functions.

Generic Letter 91-04

Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," issued on April 2, 1991, provides staff guidance that identifies the types of information that must be addressed when proposing extensions of the fuel cycle to 24 months. The GL addressed steam generator inspections (which are not applicable to Perry), leak rate testing pursuant to Appendix J to 10 CFR Part 50 (which is not applicable to Perry because individual leak testing requirements have been replaced by the Primary Containment Leakage Rate Testing Program), instrument drift, and other 18-month surveillances that are extended to 24 months.

Instrument Drift

The GL requires that licensees address instrument drift when proposing an increase in the surveillance interval for calibrating instruments that perform safety functions including providing the capability for safe shutdown. The effect of the increased calibration interval on instrument errors must be addressed because instrument errors caused by drift were considered when determining safety system setpoints and when performing safety analyses.

Non-Instrumentation Changes

For the remaining 18-month surveillances, the GL requires the following information to support conversion to a 24-month operating cycle:

1) Licensees should evaluate the effect on safety of an increase in 18-month surveillance intervals to accommodate a 24-month fuel cycle. This evaluation should support a conclusion that the effect on safety is small.

2) Licensees should confirm that historical plant maintenance and surveillance data support this conclusion.

3) Licensees should confirm that assumptions in the plant licensing basis would not be invalidated on the basis of performing any surveillance at the bounding surveillance interval limit provided to accommodate a 24-month fuel cycle.

In consideration of these confirmations, the staff concluded that licensees need not quantify the effect of the change in surveillance intervals on the availability of individual systems or components.

Technical Specification Changes

The following list itemizes the technical specification surveillance requirements (SRs) that would be changed in order to accommodate a 24-month fuel cycle at the Perry facility.

TS	System
3.1.7	Standby Liquid Control (SLC) System
	SR 3.1.7.8 Verify SLC pump flow: 18-24 months*
	SR 3.1.7.9 Verify SLC heat tracing: 18-24 months
3.1.8	Scram Discharge Volume (SDV) Vent and Drain Valves
	SR 3.1.8.3 Verify SDV Valve closure time: 18-24 months*
3.3.1.1	Reactor Protection System (RPS) Instrumentation
	SR 3.3.1.1.12 Channel Functional test: 18-24 months*
	SR 3.3.1.1.13 Channel Calibration: 18-24 months
	SR 3.3.1.1.14 Verify average power range monitor (APRM) constant within core operating limit report (COLR) limits: 18-24 months
	SR 3.3.1.1.15 Logic System Functional Test: 18-24 months*

TS (cont.)	System (cont.)
	SR 3.3.1.1.16 Verify trips not bypassed at low power: 18-24 months SR 3.3.1.1.17 Calibrate flow reference transmitters: 18-24 months SR 3.3.1.1.18 Verify RPS response time: 18-24 months
3.3.1.2	Source Range Monitor (SRM) Instrumentation
	SR 3.3.1.2.6 Channel Calibration: 18-24 months
3.3.2.1	Control Rod Block Instrumentation
	SR 3.3.2.1.8 Channel functional test: 18-24 months*
3.3.3.1	Post-Accident Monitoring (PAM) Instrumentation
	SR 3.3.3.1.3 Channel calibration: 18-24 months
3.3.3.2	Remote Shutdown System
	SR 3.3.3.2.2 Verify control circuit and transfer switch: 18-24 months SR 3.3.3.2.3 Channel calibration: 18-24 months
3.3.4.1	End-of-Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation
	SR 3.3.4.1.2 Channel calibration: 18-24 months SR 3.3.4.1.3 Logic system functional test: 18-24 months* SR 3.3.4.1.4 Verify turbine stop valve (TSV) & turbine control valve (TCV) not bypassed low power: 18-24 months SR 3.3.4.1.5 Verify EOC-RPT within limits: 18-24 months SR 3.3.4.1.6 Determine RPT arc suppression time: 60-72 months
3.3.4.2	Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation
	SR 3.3.4.2.4 Channel calibration: 18-24 months SR 3.3.4.2.5 Logic system functional test: 18-24 months*
3.3.5.1	Emergency Core Cooling System (ECCS) Instrumentation
	SR 3.3.5.1.5 Channel calibration: 18-24 months SR 3.3.5.1.6 Logic system functional test: 18-24 months* SR 3.3.5.1.7 Channel calibration: new 6 month requirement
3.3.5.2	Reactor Core Isolation Cooling (RCIC) System Instrumentation
	SR 3.3.5.2.4 Channel calibration: 18-24 months SR 3.3.5.2.5 Logic system functional test: 18-24 months* SR 3.3.5.2.6 Channel calibration: new 6 month requirement

TS (cont.)	System (cont.)
3.3.6.1	Primary Coolant and Drywell Isolation Instrumentation
	SR 3.3.6.1.4 Channel calibration: 18-24 months SR 3.3.6.1.5 Logic system functional test: 18-24 months* SR 3.3.6.1.6 Verify isolation times for main steam isolation valves (MSIVs) within limits: 18-24 months
3.3.6.2	Residual Heat Removal (RHR) Containment Spray System Instrumentation
	SR 3.3.6.2.4 Channel calibration: 18-24 months SR 3.3.6.2.5 Logic system functional test: 18-24 months* SR 3.3.6.2.6 Channel calibration: new 92 day requirement
3.3.6.3	Suppression Pool Makeup (SPMU) System Instrumentation
	SR 3.3.6.3.5 Channel calibration: 18-24 months SR 3.3.6.3.6 Logic system functional test: 18-24 months*
3.3.6.4	Relief and Low-Low Set (LLS) Instrumentation
	SR 3.3.6.4.3 Channel calibration: 18-24 months SR 3.3.6.4.4 Logic system functional test: 18-24 months*
3.3.7.1	Control Room Emergency Recirculation (CRER) System Instrumentation
	SR 3.3.7.1.4 Channel calibration: 18-24 months SR 3.3.7.1.5 Logic system functional test: 18-24 months*
3.3.8.1	Loss of Power (LOP) Instrumentation
	SR 3.3.8.1.3 Channel calibration: 18-24 months SR 3.3.8.1.4 Logic system functional test: 18-24 months* Table 3.3.8.1-1 Allowable Values for degraded voltage modified
3.3.8.2	Reactor Protection System (RPS) Electric Power Monitoring
	SR 3.3.8.2.2 Channel calibration: 18-24 months SR 3.3.8.2.3 System functional test: 18-24 months*
3.4.2	Flow Control Valves (FCVs)
	SR 3.4.2.1 Verify FCV fails "as-is:" 18-24 months* SR 3.4.2.2 Verify average rate of FCV movement: 18-24 months*
3.4.4	Safety/Relief Valves (S/RVs)
	SR 3.4.4.2 Verify S/RV actuates on auto signal: 18-24 months* SR 3.4.4.3 Verify S/RV opens on manual signal: 18-24 months

TS (cont.)	System (cont.)
3.4.7	Reactor Coolant System (RCS) Leakage Detection Instrumentation
	SR 3.4.7.3 Channel calibration: 18-24 months
3.5.1	Emergency Core Cooling System (ECCS) - Operating
	SR 3.5.1.5 Verify system actuates on auto signal: 18-24 months* SR 3.5.1.6 Verify ADS valves actuate on auto signal: 18-24 months* SR 3.5.1.7 Verify ADS valves actuate on manual signal: 18-24 months SR 3.5.1.8 Verify ECCS response time within limits: 18-24 months*
3.5.2	ECCS - Shutdown
	SR 3.5.2.6 Verify system actuates on auto signal: 18-24 months*
3.5.3	Reactor Core Isolation Cooling (RCIC) System
	SR 3.5.3.4 Verify RCIC pump flow rate: 18-24 months* SR 3.5.3.5 Verify RCIC actuates on auto signal: 18-24 months*
3.6.1.2	Primary Containment Air Locks
	SR 3.6.1.2.4 Verify air lock seal pressure system: 18-24 months
3.6.1.3	Primary Containment Isolation Valves (PCIVs)
	SR 3.6.1.3.8 Verify each PCIV actuates on auto signal: 18-24 months* SR 3.6.1.3.12 Verify purge valve position restriction: 18-24 months
3.6.1.6	Low-Low Set (LLS) Valves
	SR 3.6.1.6.1 Verify LLS valves actuate on manual signal: 18-24 months SR 3.6.1.6.2 Verify LLS valves actuate on auto signal: 18-24 months*
3.6.1.7	Residual Heat Removal (RHR) Containment Spray System
	SR 3.6.1.7.3 Verify valves actuate on auto signal: 18-24 months*
3.6.1.11	Containment Vacuum Breakers
	SR 3.6.1.11.3 Verify pressure differential of valves: 18-24 months*
3.6.2.4	Suppression Pool Makeup (SPMU) System
	SR 3.6.2.4.5 Verify valves actuate on auto signal: 18-24 months*

TS (cont.)	System (cont.)
3.6.3.1	Primary Containment Hydrogen Recombiners
	SR 3.6.3.1.1 Perform system functional test: 18-24 months SR 3.6.3.1.2 Visually inspect recombiners: 18-24 months SR 3.6.3.1.3 Perform resistance test for heaters: 18-24 months
3.6.3.2	Primary Containment and Drywell Hydrogen Igniters
	SR 3.6.3.2.3 Verify igniter draw sufficient current: 18-24 months* SR 3.6.3.2.4 Verify surface temperature of igniter: 18-24 months*
3.6.3.3	Combustible Gas Mixing System
	SR 3.6.3.3.2 Verify system flow rate: 18-24 months*
3.6.4.3	Annulus Exhaust Gas Treatment (AEGT) System
	SR 3.6.4.3.3 Verify system actuates on auto signal: 18-24 months
3.6.5.3	Drywell Isolation Valves
	SR 3.6.5.3.5 Verify valves actuate on auto signal: 18-24 months*
3.6.5.6	Drywell Vacuum Relief System
	SR 3.6.5.6.3 Verify differential pressure of valves: 18-24 months*
3.7.1	Emergency Service Water (ESW) System - Divisions 1 & 2
	SR 3.7.1.2 Verify system actuates on auto signal: 18-24 months*
3.7.2	Emergency Service Water (ESW) System - Division 3
	SR 3.7.2.2 Verify system actuates on auto signal: 18-24 months
3.7.3	Control Room Emergency Recirculation (CRER) System
	SR 3.7.3.3 Verify system actuates on auto signal: 18-24 months SR 3.7.3.4 Verify damper leakage within limits: 18-24 months
3.7.4	Control Room Heating, Ventilating, and Air Conditioning (HVAC) System
	SR 3.7.4.1 Verify each system removes heat load: 18-24 months
3.7.6	Main Turbine Bypass System
	SR 3.7.6.2 Perform system functional test: 18-24 months* SR 3.7.6.3 Verify response time within limits: 18-24 months*

TS (cont.)	System (cont.)
3.7.9	Fuel Handling Building Ventilation System
	SR 3.7.9.3 Perform system functional test: 18-24 months
3.7.10	Emergency Closed Cooling Water (ECCW) System
	SR 3.7.10.2 Verify ECCW valves actuate on auto signal: 18-24 months*
3.8.1	AC Sources - Operating
	SR 3.8.1.8 Verify manual transfer of offsite circuits: 18-24 months SR 3.8.1.9 Diesel generator (DG) load rejection test: 18-24 months SR 3.8.1.10 DG operating test after load rejection test: 18-24 months SR 3.8.1.11 DG load-shed auto start test: 18-24 months SR 3.8.1.12 DG auto start from standby condition: 18-24 months SR 3.8.1.13 Verify DG auto trip bypassed on signal: 18-24 months SR 3.8.1.14 DG 24 hour load test: 18-24 months SR 3.8.1.15 DG test for voltage and frequency: 18-24 months SR 3.8.1.16 DG synchronizes/transfer loads test: 18-24 months SR 3.8.1.17 Verify actual signal overrides test mode: 18-24 months SR 3.8.1.18 Verify load sequence time: 18-24 months SR 3.8.1.19 DG loss of power test: 18-24 months
3.8.4	DC Sources - Operating
	SR 3.8.4.3 Visual inspection of batteries: 18-24 months SR 3.8.4.4 Remove corrosion/verify connections coated: 18-24 months SR 3.8.4.5 Test battery connection resistance: 18-24 months SR 3.8.4.6 Eight-hour battery test: 18-24 months SR 3.8.4.7 Verify battery capacity during service test: 18-24 months SR 3.8.4.8 Battery performance discharge test: 60-72 months

* The TS Bases indicates that these surveillances are performed:

1) during plant outages to avoid unplanned transients if the surveillance was performed with the reactor at power,

2) during plant outages to avoid violating drywell boundary, or

3) during conditions that apply during a plant outage.

3.0 EVALUATION

The staff's review focused on the areas identified in GL 91-04. As indicated in Section 2.0 above, the applicable areas requiring specific attention are instrument drift and the remaining (i.e., non-instrumentation) surveillances being extended from 18 to 24 months.

Instrument Drift

A significant number of instrumentation changes have been proposed to support a 24-month fuel cycle. In accordance with the licensee's submittal, the licensee has:

(1) Proposed revisions to extend SR intervals from 18 months to 24 months on the basis of the Perry instrument drift study.

(2) Proposed revisions to reduce SR intervals from 18 months to 6 months on the basis of the Perry instrument drift study.

(3) Proposed revisions to reduce SR intervals from 18 months to 3 months on the basis of Perry operational and testing procedures.

(4) Proposed allowable value revisions required by the Perry instrument drift study.

(5) Proposed administrative revisions supporting the preceding areas of revision.

The staff's review grouped the instrumentation changes together. This primarily includes extensions of channel calibrations and logic system functional tests from 18 to 24 months. The following TS changes have been grouped together:

3.3.1.1 Reactor Protection System (RPS) Instrumentation
- SR 3.3.1.1.12 Channel Functional test: 18-24 months
- SR 3.3.1.1.13 Channel Calibration: 18-24 months
- SR 3.3.1.1.14 Verify APRM constant within COLR limits: 18-24 months
- SR 3.3.1.1.15 Logic System Functional Test: 18-24 months
- SR 3.3.1.1.16 Verify trips not bypassed at low power: 18-24 months
- SR 3.3.1.1.17 Calibrate flow reference transmitters: 18-24 months
- SR 3.3.1.1.18 Verify RPS response time: 18-24 months

3.3.1.2 Source Range Monitor (SRM) Instrumentation
- SR 3.3.1.2.6 Channel Calibration: 18-24 months

3.3.2.1 Control Rod Block Instrumentation
- SR 3.3.2.1.8 Channel functional test: 18-24 months

3.3.3.1 Post-Accident Monitoring (PAM) Instrumentation
- SR 3.3.3.1.3 Channel calibration: 18-24 months

3.3.3.2 Remote Shutdown System
- SR 3.3.3.2.2 Verify control circuit and transfer switch: 18-24 months
- SR 3.3.3.2.3 Channel calibration: 18-24 months

3.3.4.1 End-of-Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation
- SR 3.3.4.1.2 Channel calibration: 18-24 months
- SR 3.3.4.1.3 Logic system functional test: 18-24 months
- SR 3.3.4.1.4 Verify TSV & TCV not bypassed low power: 18-24 months
- SR 3.3.4.1.5 Verify EOC-RPT within limits: 18-24 months

3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation
SR 3.3.4.2.4 Channel calibration: 18-24 months
SR 3.3.4.2.5 Logic system functional test: 18-24 months

3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation
SR 3.3.5.1.5 Channel calibration: 18-24 months
SR 3.3.5.1.6 Logic system functional test: 18-24 months
SR 3.3.5.1.7 Channel calibration: new 6 month requirement

3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation
SR 3.3.5.2.4 Channel calibration: 18-24 months
SR 3.3.5.2.5 Logic system functional test: 18-24 months
SR 3.3.5.2.6 Channel calibration: new 6 month requirement

3.3.6.1 Primary Coolant and Drywell Isolation Instrumentation
SR 3.3.6.1.4 Channel calibration: 18-24 months
SR 3.3.6.1.5 Logic system functional test: 18-24 months
SR 3.3.6.1.6 Verify isolation times for MSIVs within limits: 18-24 months

3.3.6.2 Residual Heat Removal (RHR) Containment Spray System Instrumentation
SR 3.3.6.2.4 Channel calibration: 18-24 months
SR 3.3.6.2.5 Logic system functional test: 18-24 months
SR 3.3.6.2.6 Channel calibration: new 92 day requirement

3.3.6.3 Suppression Pool Makeup (SPMU) System Instrumentation
SR 3.3.6.3.5 Channel calibration: 18-24 months
SR 3.3.6.3.6 Logic system functional test: 18-24 months

3.3.6.4 Relief and Low-Low Set (LLS) Instrumentation
SR 3.3.6.4.3 Channel calibration: 18-24 months
SR 3.3.6.4.4 Logic system functional test: 18-24 months

3.3.7.1 Control Room Emergency Recirculation (CRER) System Instrumentation
SR 3.3.7.1.4 Channel calibration: 18-24 months
SR 3.3.7.1.5 Logic system functional test: 18-24 months

3.3.8.1 Loss of Power (LOP) Instrumentation
SR 3.3.8.1.3 Channel calibration: 18-24 months
SR 3.3.8.1.4 Logic system functional test: 18-24 months
Table 3.3.8.1-1 Allowable Values for degraded voltage modified

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring
SR 3.3.8.2.2 Channel calibration: 18-24 months
SR 3.3.8.2.3 System functional test: 18-24 months

The GL required that information in seven specific areas be addressed in order to provide an acceptable basis for increasing the calibration interval for instruments that are used to perform safety functions. The following discussion identifies these seven areas and includes a summary of the licensee's response along with the staff's conclusions.

(1) Confirm that instrument drift as determined by as-found and as-left calibration data from surveillance and maintenance records have not, except on rare occasions, exceeded acceptable limits for a calibration interval.

Response:

The effect of longer calibration intervals on the TS instrumentation was evaluated by performing a review of the surveillance test history for the affected instrumentation, including, where necessary, an instrument drift study. The failure history evaluation and drift study demonstrates that except on rare occasion, instrument drift has not exceeded the current allowable limits.

The licensee has demonstrated that most problems affecting instrument operability were found as a result of surveillance tests other than the instrument calibration. Many of the instances where the drift exceeded the allowable values or where the instruments failed calibration, were due to a Rosemount transmitter oil loss. Nuclear Regulatory Commission (NRC) Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," identified a generic failure mode of oil loss from the Rosemount sealed sensing module. In response to the Bulletin and Supplement 1 to the Bulletin, the licensee evaluated their Rosemount transmitters and replaced those trending negatively. In summary, the staff concludes that, except on rare occasions, instrument drift has not exceeded acceptable limits for a calibration interval.

(2) Confirm that the values of drift for each instrument type (make, model, and range) and application have been determined with a high probability and a high degree of confidence. Provide a summary of the methodology and assumptions used to determine the rate of instrument drift with time based upon historical plant calibration data.

Response:

The licensee performed analyses of drift for all affected instrument loops in order to establish the effect of a 30-month (24 months+25% allowable tolerance) calibration frequency on instrument performance using the Perry-Specific Drift Analysis Design Guide. This design guide is based on the Electric Power Research Institute (EPRI) TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs," Revision 1, October 1998. The EPRI software utilizes the as-found/as-left analysis methodology to statistically determine drift for current calibration intervals. The licensee has used Microsoft Excel spreadsheets to perform additional analyses in order to be consistent with the analyses recommended by the NRC in its safety evaluation report (SER) for Peach Bottom Atomic Power Station, Units 2 and 3.

The licensee used the as-found/as-left calibration data to determine the rate of instrument drift with time over the calibration interval. This data allowed the determination of instrument drift for those instruments that perform safety functions.

The staff has reviewed the licensee's submittal, including the responses to additional information, and has verified that the licensee has addressed the issues identified in GL 91-04 and provided an acceptable basis for increasing the calibration interval for instruments that are used to perform the safety function. The staff agrees that the licensee has determined the value of drift for each instrument type and application with a high probability and high degree of confidence. On the basis of the evaluation, the staff concludes that the licensee has confirmed that safety limits and safety analysis assumptions will not be exceeded after the worst case drift

is considered for the instruments for which the surveillance intervals will be extended to 24 months.

(3) Confirm that the magnitude of instrument drift has been determined with a high probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument type (make, model number, and range) and application that performs a safety function. Provide a list of the channels by TS section that identifies these instrument applications.

Response:

The magnitude of the instrument drift error that occurs over a longer interval is an important consideration to justify an extension of the calibration interval for instruments that perform safety functions. The licensee has identified the applications where the calibration interval will be 24 months (30 months with the 25% extension limit) and determined the projected value of instrument drift that could occur.

The staff concludes that the licensee's methodology, which uses EPRI TR-103335, determines the magnitude of instrument drift with a high probability and a high degree of confidence for a calibration interval of 30 months.

(4) Confirm that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis. If this results in revised setpoints to accommodate large drift errors, provide proposed TS changes to update trip setpoints. If the drift errors result in a revised safety analysis to support existing setpoints, provide a summary of the updated analysis conclusions to confirm that safety limits and safety analysis assumptions are not exceeded.

Response:

The licensee used the General Electric Instrument Setpoint Methodology (ISM) as documented in GE NEDC 31336P-A, dated September 1996. Allowable Values (AVs) and Nominal Trip Setpoints (NTSPs) have been calculated based on the ISM. The 30 month drift value was compared with the drift uncertainty associated with the specific instrument setpoint analysis. Where the projected 30 month drift was greater than the drift value assumed in the setpoint calculation, the NTSPs have been recalculated to account for the 30 month drift.

Where the evaluation identified there was insufficient operating margin to allow for setpoint changes, then the analytical limit or AVs were evaluated for adjustment. In this regard, the licensee proposed to revise the AVs for the function 1.d and 1.e in TS Table 3.3.8.1-1, "Loss of Power Instrumentation." The AV for function 1.d, "Degraded Voltage - Time Delay, No LOCA," was ≥ 4.5 minutes (270 seconds) and ≤ 5.5 minutes (330 seconds). The licensee proposed a single-sided AV of ≤ 270 seconds with an NTSP of 240 seconds. The AV for function 1.e, "Degraded Voltage - Time Delay, LOCA," was ≥ 13.5 seconds and ≤ 16.5 seconds. The licensee has proposed to revise this value to ≥ 9 seconds and ≤ 16.5 seconds.

The staff recommended that a lower boundary be reinstated on the AV for function 1.d, "Degraded Voltage - Time Delay, No LOCA," to ensure that overlap will not occur between this AV and function 1.e, "Degraded Voltage - Time Delay, LOCA." By letter dated May 9, 2000, the licensee proposed a lower limit AV of ≥ 180 seconds. Since the licensee's setpoint methodology is based on the staff-approved methodology, the staff finds the revised AVs

acceptable. The licensee requested to defer implementation of the new AVs prior to completing the eighth refueling outage (RFO-8). The staff finds this implementation schedule acceptable.

(5) Confirm that the projected instrument errors caused by drift are acceptable for control of plant parameters to effect a safe shutdown with the associated instrumentation.

Response:

The licensee compared the calculated drift values with the drift allowances in the setpoint calculation and concluded that the instruments could still be effectively utilized to perform a safe shutdown. Since the licensee's setpoint methodology is based on the staff-approved methodology, the staff finds the licensee's conclusion acceptable.

(6) Confirm that all conditions and assumptions of the setpoint and safety analyses have been checked and are appropriately reflected in the acceptance criteria of plant surveillance procedures for channel checks, channel functional tests, and channel calibrations.

Response:

The NRC has observed some licensees having problems when asked to confirm that instrument drift and other errors and assumptions of the safety and setpoint analyses are consistent with the acceptance criteria included in plant surveillance procedures. Therefore, the staff has requested that the review described above include channel checks, channel functional tests, and the calibration of channels for which surveillance intervals are being increased.

The licensee has verified that the plant surveillance procedures appropriately reflect the assumptions and conditions of the setpoint calculations.

(7) Provide a summary description of the program for monitoring and assessing the effects of increased calibration surveillance intervals on instrument drift and its effect on safety.

Response:

The licensee has established a program to monitor calibration results and the effect on instrument drift that will accompany the increase in calibration intervals. This program will identify occurrences of instruments found outside of their allowable value, or instruments whose performance is not as assumed in the drift or setpoint analysis. When as-found conditions are outside of the allowable value, an evaluation will be performed to (1) determine if the assumptions made to extend the calibration frequency are still valid, (2) evaluate the effect on plant safety, and (3) evaluate instrument operability. The staff finds this program acceptable.

Reduced Calibration Intervals

Based on the Perry instrument drift study, the licensee has proposed the following changes involving reductions in the calibration intervals:

TS 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

TS Table 3.3.5.1-1, Function 3.e, Suppression Pool Water Level - High, monitors suppression pool high water level. This instrumentation automatically realigns suction for the high pressure

core spray system from the condensate storage tank to the suppression pool upon high water level in the suppression pool. High suppression pool water level could result in excessive design loads following safety relief valve blowdown.

SR 3.3.5.1.7 Perform Channel Calibration

The licensee has proposed adding new SR 3.3.5.1.7 to revise the channel calibration for the above Function 3.e of TS Table 3.3.5.1-1. This revises the surveillance test interval from once every 18 months to once every 6 months for a maximum interval of 7.5 months including the 25% grace period. The licensee has proposed to reduce the channel calibration interval on the basis of the drift analysis performed to meet the GL 91-04 requirement. The nominal trip setpoint and allowable value were revised, using the recommendations of EPRI TR-103335 Rev. 1, "Guidelines for Instrument Calibration Extension/Reduction Programs," to determine the acceptable drift that could be accommodated based on plant operating needs. The staff finds the licensee's proposal acceptable because it is based on the EPRI recommendations and meets the guidance of GL 91-04.

TS 3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

TS Table 3.3.5.2-1, Function 4, Suppression Pool Water Level - High, monitors suppression pool high water level. This instrumentation automatically realigns suction for the RCIC system from the condensate storage tank to the suppression pool upon high water level in the suppression pool. High suppression pool water level could result in excessive design loads following safety relief valve blowdown.

SR 3.3.5.2.6 Perform Channel Calibration

The licensee has proposed adding new SR 3.3.5.2.6 to revise the channel calibration for the above Function 4 of TS Table 3.3.5.1-1. This revises the surveillance test interval from once every 18 months to once every 6 months for a maximum interval of 7.5 months including the 25% grace period. The licensee has proposed to reduce the channel calibration interval on the basis of the drift analysis performed to meet the GL 91-04 requirement. The nominal trip setpoint and allowable value were revised, using the recommendations of EPRI TR-103335 Rev. 1, "Guidelines for Instrument Calibration Extension/Reduction Programs," to determine the acceptable drift that could be accommodated based on plant operating needs. The staff finds the licensee's proposal acceptable because it is based on the EPRI recommendations and meets the guidance of GL 91-04.

TS 3.3.6.2 Residual Heat Removal (RHR) Containment Spray System Instrumentation

TS Table 3.3.6.2-1, Function 4, System A and System B Timers, inserts a 10 minute time delay to initiation of the RHR containment spray system if low pressure coolant injection (LPCI) has been initiated. This action ensures that the LPCI function has been fulfilled prior to initiating containment spray. This time delay is needed because the same pumps provide both the LPCI and containment spray function.

TS Table 3.3.6.2-1, Function 5, System B Timer, is a second containment spray System B timer to prevent both containment spray subsystems from actuating at the same time. This timer delays the starting of the second pump by 35 seconds.

SR 3.3.6.2.6 Perform Channel Calibration

The licensee has proposed adding new SR 3.3.6.2.6 to revise the channel calibration for the above Functions 4 and 5 of TS Table 3.3.6.2-1. This revises the surveillance test interval from once every 18 months to once every 92 days for a maximum interval of 115 days including the 25% grace period. The licensee has proposed to reduce the channel calibration interval on the basis of the drift analysis performed to meet the GL 91-04 requirement. The nominal trip setpoint and allowable value were revised, using the recommendations of EPRI TR-103335 Rev. 1, "Guidelines for Instrument Calibration Extension/Reduction Programs," to determine the acceptable drift that could be accommodated based on plant operating needs. The staff finds the licensee's proposal acceptable because it is based on the EPRI recommendations and meets the guidance of GL 91-04.

Other Instrumentation Changes

TS 3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

SR 3.3.4.1.6 Determine RPT breaker arc suppression

This SR ensures that the RPT breaker arc suppression test is provided to the EOC-RPT system response time test. The licensee proposed that the surveillance test interval be increased from once every 60 months to once every 72 months, for a maximum of 90 months including the 25% grace period.

The staff concluded that extending the SR from 60 to 72 months was outside the scope of GL 91-04 and could not be similarly justified. By letter dated January 17, 2000, the licensee withdrew its request to extend this SR.

Non-Instrumentation Changes

Regarding non-instrumentation changes, GL 91-04 requires licensees to evaluate the effect on safety of the change in surveillance intervals to accommodate a 24-month fuel cycle. This evaluation should support a conclusion that the effect on safety is small. In addition, licensees should confirm that the performance of surveillances at the bounding surveillance interval limit provided to accommodate a 24-month fuel cycle would not invalidate any assumption in the plant licensing basis. In consideration of these confirmations, the licensees need not quantify the effect of the change in surveillance intervals on the availability of individual systems or components.

To address the requirements of the GL 91-04, the licensee has referenced the NRC SER (dated August 2, 1993) relating to the extension of the Peach Bottom Units 2 and 3 surveillance intervals from 18 months to 24 months. In this SER, the staff stated the following:

> *Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay, or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability.*

The licensee has reviewed the surveillance test history at Perry and has validated this conclusion. The licensee's review has demonstrated that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

The following discussion describes how the staff determined that the effect of extending surveillance intervals on plant safety is small. The staff's review focused on redundant electrical and mechanical components as well as other surveillances conducted during plant operation that confirm that these systems and components can perform their safety functions.

TS 3.1.7 Standby Liquid Control (SLC) System

The SLC system is a backup to the control rod drive system and designed to be single-failure proof.

SR 3.1.7.8 Verify flow through one SLC subsystem from pump into reactor pressure vessel

This SR ensures that the SLC system is capable of injecting into the reactor pressure vessel by verifying a flow path and also by firing one of the explosive valves. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Each SLC pump is tested during the operating cycle in accordance with the Inservice Testing Program.
- Daily SRs verifies that temperatures in the SLC system tank and the SLC pump suction piping precludes boron precipitation.
- Monthly SRs ensure the continuity of the explosive charge on the discharge valves.
- The explosive valves are designed to be highly reliable.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.1.7.9 Verify all heat traced piping between storage tank and pump suction is unblocked

This SR ensures that the SLC system is capable of injecting into the reactor pressure vessel by verifying a flow path through the heat traced piping. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Each SLC pump is tested during the operating cycle in accordance with the Inservice Testing Program.
- Daily SRs verifies that temperatures in the SLC system tank and the SLC pump suction piping precludes boron precipitation.

- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.1.8 Scram Discharge Volume (SDV) Vent and Drain Valves

SR 3.1.8.3 Verify each SDV vent and drain valve:

(A) Closes in ≤ 30 seconds after receipt of an actual or simulated scram signal; and
(B) Opens when the actual or simulated scram signal is reset

This SR ensures that the SDV vent and drain valves close in ≤ 30 seconds after receipt of an actual or simulated scram signal and open when the actual or simulated scram signal is reset. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- SR 3.1.8.2 requires that the SDV vent and drain valves be cycled fully closed and fully open once every 92 days during the operating cycle.
- Performance of SR 3.1.8.2 demonstrates that mechanical components and portions of the valve logic remain operable.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.4.2 Flow Control Valves (FCVs)

SR 3.4.2.1 Verify each FCV fails "as is" on loss of hydraulic pressure at the hydraulic unit

This SR ensures that the FCVs fail "as is" on loss of hydraulic pressure at the hydraulic unit. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

Solid state control logic will generate an FCV "motion inhibit" signal in response to any one of several hydraulic power unit or analog control circuit failure signals. The "motion inhibit" signal causes hydraulic power unit shutdown and hydraulic isolation such that the FCVs fail "as is." Hydraulic power unit pilot operated lock out valves (pilot operated check valves) located between the FCV actuator and the pilot operated isolation valves (POIV) are required to close on a loss of hydraulic pressure. When closed, these valves inhibit FCV motion by blocking hydraulic pressure from the POIV to the FCV actuator.

System availability during the operating cycle is assured by:

- Due to the mechanical nature of the check valves and the failure on loss of motive force, there are no definable drift components or any time based conditions that could appreciably change during the operating cycle.
- The licensee's review of surveillance test history has identified a single-failure which was caused by a blown fuse. This failure has not been repetitive. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.4.2.2 Verify average rate of each FCV movement is:

(A) ≤ 11% of stroke per second for opening; and
(B) ≤ 11% of stroke per second for closing.

This SR ensures that the average rate of each FCV movement is ≤ 11% of stroke per second for both opening and closing. The FCV actuator has an inherent rate-limiting feature that will limit the resulting rate of change of core flow and power to within safe limits in the event of an upscale or downscale failure of the valve position or velocity control system. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Due to the mechanical nature of the rate limiter, there are no definable drift components for the rate settings or any time based conditions that could appreciably change during the operating cycle.
- The licensee's review of surveillance test history has identified a single-failure which was caused by a blown fuse. This failure has not been repetitive. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.4.4 Safety Relief Valves (S/RVs)

SR 3.4.4.2 Verify each required relief function S/RV actuates on an actual or simulated automatic initiation signal

This SR only pertains to the pilot actuated relief mode of the S/RVs. Since valve motion is not required, and the Channel Functional Test (SR 3.3.6.4.1) and Trip Unit Calibration (SR 3.3.6.4.2) ensure the operation of other system components, this test is effectively a Logic System Functional Test. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The function is verified to be operating properly by the performance of the Channel Functional Test and the Trip Unit Calibration which are both conducted once every 92 days.
- This testing ensures that a significant portion of the circuitry is operating properly and will detect significant failures of the circuitry.
- The actuating logic is designed to be single-failure proof and, therefore, highly reliable.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.4.4.3 Verify each required S/RV opens when manually actuated.

This SR only verifies that the valve will open when manually actuated and that no blockage exists in the valve discharge line. The SR is performed following plant startup and only after adequate reactor steam pressure is available and adequate steam flow through the main turbine or turbine bypass valves has been established in order to permit stable plant conditions during testing. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Since the S/RVs are tested soon after startup, any failure of actual valve function would be noted and corrected prior to extended plant operation.
- The SR primarily tests the operating circuit from the manual operating switch to the solenoid valves. The solenoid valves are redundant and highly reliable.
- There are no time based failure modes that would prevent the valve from opening during operation once the ability to open is proven initially following plant startup.
- There are no time based discharge blockage modes for the S/RVs.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.4.7 Reactor Coolant System Leakage Detection Instrumentation

SR 3.4.7.3 Perform Channel Calibration of required leakage detection instrumentation (3.4.7.a, Drywell Floor Drain Sump)

This SR monitors drywell sump inventory to indirectly determine reactor coolant system leakage rates. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Since instrument drift is a small change over a long duration (months) and leakage is determined over a short duration (hours), the reactor coolant system leakage detection systems will not be affected by instrument drift resulting from an increase in calibration interval.

System availability during the operating cycle is assured by:

- Two separate methods of determining reactor coolant system leakage will remain operational (i.e., monitoring of drywell sump level from the control room and monitoring of drywell sump pump run times).
- The licensee's review of surveillance test history has identified a single-failure which was an "on peg" downscale indication on the recorder. This was caused by a worn red pen holder and guide and has not been repetitive. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.4.7.3 Perform Channel Calibration of required leakage detection instrumentation (3.4.7.b, Drywell Atmospheric Gas/Particulate Radiation Monitor)

This SR involves calibration of the radiation detector by exposing the sensor-converter to a known source in a constant geometry. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Due to the uncertainties associated with the calibration methods for these devices (e.g., source decay problems, positioning of sources, and signal strength), any drift evaluation would provide no true indication of the instrument's performance over time.

System availability during the operating cycle is assured by:

- Channel checks of the required drywell atmospheric monitoring system is performed once every 12 hours.
- Channel functional tests of the required leakage detection instrumentation is performed once every 31 days.
- The licensee's review of surveillance test history has identified a single-failure which was the result of a dirty potentiometer. This failure was not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.4.7.3 Perform Channel Calibration of required leakage detection instrumentation (3.4.7.c, Upper Drywell Air Cooler Condensate Flow Rate Monitor)

This SR involves channel calibration of Rosemount transmitters. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

There are only two Rosemount transmitters of this type installed in the plant. The Rosemount trip units are functionally checked and setpoint verified more frequently, and if necessary, recalibrated. These more frequent testing requirements (monthly) remain unchanged. Therefore, an increase in the surveillance interval to accommodate a 24-month fuel cycle does not affect the Rosemount trip units with respect to drift.

System availability during the operating cycle is assured by:

- A review of the calibration history for the transmitters indicated a worst case drift of 0.1% of calibrated span. This drift value is insignificant when compared to the allowance for this function.
- Channel functional tests will continue to be conducted monthly.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.5.1 ECCS - Operating

SR 3.5.1.5 Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal

This SR includes the high pressure core spray (HPCS) system, the low pressure core spray (LPCS) system, and the low pressure coolant injection (LPCI) system. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. The ECCS functional test ensures that a system initiation signal (actual or simulated) to the automatic initiation logic will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of automatic valves to their required positions.

HPCS, LPCS, and LPCI system availability during the operating cycle is assured by:

- The ECCS network has built-in redundancy so that no single-failure prevents starting of the ECCS.
- Extensions of the calibration cycle and logic system functional test frequency have previously been justified.
- Pumps and valves associated with these systems are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable.
- The licensee's review of surveillance test history for the HPCS system did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCS system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCI system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.5.1.6 Verify the automatic depressurization system (ADS) actuates on an actual or simulated automatic initiation signal

This SR verifies that the ADS operates as designed when initiated either by an actual or simulated initiation signal and that the valve and solenoid are functioning properly. Eight (8) of the nineteen (19) S/RVs are included in the ADS. This SR only pertains to the ADS mode of the S/RVs. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The ADS has built-in redundancy so that no single-failure prevents the opening of the required number of ADS valves.
- There are two solenoids per valve to ensure operability. Extending the interval between SR performances will not have a significant impact on reliability because ADS uses two independent and redundant trip systems.
- The licensee's review of surveillance test history for the ADS identified a single test failure in which an Agastat relay failed to function during performance of a test. The licensee maintains a replacement program to ensure that Agastat relays are replaced before relay age problems occur. This failure is not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.5.1.7 Verify each ADS valve opens when manually actuated

This SR verifies that the ADS function operates as designed when manually actuated and also ensures that no blockage exists in the S/RV discharge lines. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The ADS has built-in redundancy so that no single-failure prevents the opening of the required number of ADS valves.
- There are two solenoids per valve to ensure operability. Extending the interval between SR performances will not have a significant impact on reliability because ADS uses two independent and redundant trip systems.
- The valves are normally tested soon after plant startup such that any failure of actual valve function would be noted and corrected prior to extended plant operation.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.5.1.8 Verify the ECCS response time for each ECCS injection/spray subsystem is within limits

This SR includes the HPCS system, the LPCS system, and the LPCI system. The SR ensures that the systems will function within the response time assumed in the analyses of the applicable analyzed event. The response time is primarily dependent on the time required for the pumps to start and achieve rated flow and pressure conditions and the time for the valves associated with injection to reposition. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

HPCS, LPCS, and LPCI system availability during the operating cycle is assured by:

- The ECCS network has built-in redundancy so that no single-failure prevents starting of the ECCS.
- Extensions of the calibration cycle and logic system functional test frequency have previously been justified.
- Pumps and valves associated with these systems are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable. These tests, which verify pump operation, pump differential pressure, and valve stroke capability, would detect major degradation in system components that could impact system response time.
- The licensee's review of surveillance test history for the HPCS system did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCS system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCI system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.5.2 ECCS - Shutdown

SR 3.5.2.6 Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal

This SR includes the HPCS system, the LPCS system, and the LPCI system. The ECCS functional test ensures that a system initiation signal (actual or simulated) to the automatic initiation logic will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of automatic valves to their required positions. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

HPCS, LPCS, and LPCI system availability during the operating cycle is assured by:

- The ECCS network has built-in redundancy so that no single-failure prevents starting of the ECCS.
- Extensions of the calibration cycle and logic system functional test frequency have previously been justified.
- Pumps and valves associated with these systems are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable.
- The licensee's review of surveillance test history for the HPCS system did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCS system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.
- The licensee's review of surveillance test history for the LPCI system identified two test failures. The failures, which included failure of a logic relay to actuate and oxidation of the contacts of a separate logic relay, are not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.5.3 Reactor Core Isolation Cooling (RCIC) System

SR 3.5.3.4 Verify, with RCIC steam supply pressure ≥ 150 psig and ≤ 165 psig, the RCIC pump can develop a flow rate of ≥ 700 gpm against a system head corresponding to reactor pressure

This SR ensures the RCIC system is capable of performing its intended function at low reactor coolant pressure. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- SR 3.5.3.3, which will continue to be performed at 92 day intervals, will demonstrate that the RCIC system is capable of meeting design flow rates at normal plant operating conditions. This test would detect significant failures of the RCIC turbine or pump that could lead to failure of the RCIC system to perform its intended function at low reactor pressures.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.5.3.5 Verify the RCIC system actuates on an actual or simulated automatic initiation signal

This SR ensures that a system initiation signal (actual or simulated) to the automatic initiation logic of RCIC will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of automatic valves to their required positions. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The functions performed by RCIC can also be performed by HPCS and the plant's technical specifications do not permit HPCS and RCIC to be inoperable concurrently.
- Pumps and valves associated with the RCIC system are tested on a quarterly basis by the Inservice Testing program. These tests, which verify pump operation, pump differential pressure, and valve stroke capability, would detect major degradation in system components that could impact system operation.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information and the fact that the RCIC system is not relied upon in the safety analysis, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.1.2 Primary Containment Air Locks

SR 3.6.1.2.4 Verify, from an initial pressure of 90 psig, the primary containment air lock seal pneumatic system pressure does not decay at a rate equivalent to > 1.5 psig for a period of 24 hours

This SR ensures that the inflatable seals are capable of maintaining a seal at ≥ 90 psig. Each door of the containment air lock has two seals to ensure that they are single-failure proof in maintaining the leak tight boundary of primary containment. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Each door of the containment air lock has two seals to ensure that they are single-failure proof in maintaining the leak tight boundary of primary containment.
- The primary containment air lock seal air header pressure is verified to be ≥ 90 psig once every 7 days (SR 3.6.1.2.2).
- The personnel air lock leakage control system constantly monitors the space between the pair of door seals on the outer doors of the personnel air locks for seal integrity.
- The licensee's review of the surveillance test history identified three failures on the upper containment airlock which were not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information and the fact that the RCIC system is not relied upon in the safety analysis, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.1.3 Primary Containment Isolation Valves (PCIVs)

SR 3.6.1.3.8 Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal

This SR ensures that each PCIV will actuate to its isolation position on a primary containment isolation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The PCIVs, including the actuating logic, are designed to be single-failure proof and, therefore, are highly reliable.
- Extension of the logic system functional test has been previously justified.
- During the operating cycle the PCIVs are either exercised (closed or open) or partially stroked (open or closed) in accordance with the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable. The exercise or partial stroke testing of these PCIVs tests a significant portion of the PCIV's circuitry and will detect failures of this circuitry or failures with valve movement.
- The licensee's review of the surveillance test history identified 20 failures in nine different systems. The failures are rarely duplicated among the various systems and are not considered repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information and the fact that the RCIC system is not relied upon in the safety analysis, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.6.1.3.12 Verify each outboard 42-inch primary containment purge valve is blocked to restrict the valve from opening > 50°

This SR ensures that the containment purge valve is restricted from opening > 50°. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The valve has a mechanical block installed on the valve actuator to limit valve opening. The block is not subject to drift or other time-based changes that would be affected by the change to a 24-month operating cycle.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.1.6 Low-Low Set (LLS) Valves

Six of the nineteen S/RVs are equipped to provide the LLS function. The LLS logic causes all the LLS valves to stay open longer, such that reopening of more than one S/RV is prevented on subsequent actuations. Therefore, the LLS function prevents excessive short duration S/RV cycles with valve actuation at the relief setpoint.

SR 3.6.1.6.1 Verify each LLS valve opens when manually actuated

This SR ensures that the valve will open when manually actuated and that no blockage exists in the valve discharge line. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The S/RVs are normally tested soon after startup such that any failure of actual valve function would be noted and corrected prior to extended plant operation.
- Other testing periodically verifies the operation of the circuit, solenoid valve, and functional logic components.
- The LLS has built-in redundancy. Six valves are designated for LLS and only two are required to perform the function.
- There are no identified time-based failure modes that would prevent the valve from opening during operation.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.6.1.6.2 Verify the LLS function of the six safety/relief valves actuates on an actual or simulated automatic initiation signal

This SR ensures that the six S/RVs performing the LLS function actuate on an actual or simulated automatic initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The S/RVs are normally tested soon after startup such that any failure of actual valve function would be noted and corrected prior to extended plant operation.
- Other testing periodically verifies the operation of the circuit, solenoid valve, and functional logic components.
- There are no identified time-based failure modes that would prevent the valve from opening during operation.
- The LLS has built-in redundancy. Six valves are designated for LLS and only two are required to perform the function.

- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.1.7 Residual Heat Removal (RHR) Containment Spray System

SR 3.6.1.7.3 Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal

This SR ensures that each containment spray automatic valve will actuate to its required position on a simulated or automatic initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The containment spray system has built-in redundancy so that no single-failure prevents system operation.
- Extensions of the logic system functional test frequency for the instrumentation have previously been justified.
- The pumps and valves associated with the containment spray system are tested quarterly through the Inservice Test program. These tests, which verify pump operation, pump differential pressure, and valve stroke capability, would detect major degradation in system components that could impact system operation.
- The licensee's review of the surveillance test history identified a single test failure which was not considered repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.1.11 Containment Vacuum Breakers

The design of the containment vacuum relief system consists of four 24-inch vacuum relief lines. Each vacuum relief line has an inner 24-inch simple check valve that serves as the vacuum breaker device and an outer 24-inch butterfly valve that serves as the outer containment isolation valve. The safety analysis assumes that the vacuum breaker will begin to open at a differential pressure of $\leq$ 0.1 psid and to be fully open at a differential pressure of $\leq$ 0.2 psid.

SR 3.6.1.11.3 Verify the opening pressure differential of each required vacuum breaker is $\leq$ 0.1 psid, and the opening setpoint of the vacuum breaker isolation valve is $\geq$ 0.052 psid and $\leq$ 0.160 psid

This SR ensures that the vacuum breakers are available to perform their intended function.

The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The containment vacuum breakers have built-in redundancy. Only two of the four vacuum breakers are required to perform the function of protecting the containment against negative pressure buildup.
- The Rosemount trip units are functionally tested monthly. These tests verify their setpoints, and if necessary, the units are recalibrated. Therefore, an increase in the surveillance interval to accommodate a 24-month fuel cycle does not affect the Rosemount trip units with respect to drift.
- A review of the opening differential pressure for the vacuum breaker indicates that the breaker has opened at less than 0.1 psid for all tests. These are not time-based conditions that would change the opening of the vacuum breaker based on the extended SR frequency.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.2.4 Suppression Pool Makeup (SPMU) System

The SPMU system transfers water from the upper containment pool to the suppression pool after a loss-of-coolant accident (LOCA). The SPMU system consists of two redundant subsystems, each capable of dumping the makeup volume from the upper pool to the suppression pool by gravity flow. Each dump line includes two normally closed valves in series.

SR 3.6.2.4.5 Verify each SPMU subsystem automatic valve actuates to the correct position on an actual or simulated automatic initiation signal

This SR ensures that each SPMU automatic valve will actuate to its required position on receipt of an actual or simulated automatic initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The SPMU system has built-in redundancy so that no single-failure prevents system operation.
- The valves associated with the SPMU system are tested on a quarterly basis by the Inservice Testing program. These tests, which verify valve stroke capability, would detect major degradation that could impact system operation.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.3.1 Primary Containment Hydrogen Recombiners

Recombination is accomplished by heating the hydrogen air mixture > 1150°F. Air flows through each recombiner unit at 100 cfm with natural circulation providing the motive force.

SR 3.6.3.1.1 Perform a system functional test for each primary containment hydrogen recombiner

This SR verifies the ability of the recombiner system to actuate and prevent the hydrogen-oxygen level within the primary containment from reaching the flammability limit. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The hydrogen recombiners have built-in redundancy so that no single-failure prevents system operation. Two 100% capacity independent recombiner subsystems are provided.
- The hydrogen recombiners are mechanically passive and are not subject to mechanical failure.
- The hydrogen purge system will continue to be operable and acts as an alternate hydrogen control system.
- The hydrogen igniters will continue to be operable and acts as an alternate hydrogen control system.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.6.3.1.2 Visually examine each primary containment hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions

This SR ensures that there are no physical problems (e.g., loose wiring or structural connections, deposits of foreign materials, etc.) that could affect primary containment hydrogen recombiner operation. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The hydrogen recombiners have built-in redundancy so that no single-failure prevents system operation. Two 100% capacity independent recombiner subsystems are provided.
- The hydrogen recombiners are mechanically passive and are not subject to mechanical failure.
- The hydrogen purge system will continue to be operable and acts as an alternate hydrogen control system.
- The hydrogen igniters will continue to be operable and acts as an alternate hydrogen control system.
- The licensee's review of surveillance test history did not identify any test failures that

would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.6.3.1.3 Perform a resistance to ground test for each heater phase

This SR requires performance of a resistance to ground test of each heater phase to ensure that there are no detectable grounds in any heater phase. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The hydrogen recombiners have built-in redundancy so that no single-failure prevents system operation. Two 100% capacity independent recombiner subsystems are provided.
- The hydrogen recombiners are mechanically passive and are not subject to mechanical failure.
- The hydrogen purge system will continue to be operable and acts as an alternate hydrogen control system.
- The hydrogen igniters will continue to be operable and acts as an alternate hydrogen control system.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.3.2 Primary Containment and Drywell Hydrogen Igniters

SR 3.6.3.2.3 Verify each required igniter in inaccessible areas develops sufficient current draw for a ≥ 1700°F surface temperature

This SR verifies that igniters in inaccessible areas are operable by performing amperage versus voltage measurements. The surveillance is used to verify that the surface of igniters is sufficient to produce a surface temperature ≥ 1700°F. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The igniters are mechanically passive and are not subject to mechanical failure.
- SR 3.6.3.2.1 is an equivalent test to SR 3.6.2.3 and is performed on a 184 day frequency.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.6.3.2.4 Verify each required igniter in accessible areas develops a surface temperature of ≥ 1700°F

This SR verifies that igniters in accessible areas are operable by demonstrating a surface temperature ≥ 1700°F. This SR is performed by taking amperage versus voltage measurements. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The igniters are mechanically passive and are not subject to mechanical failure.
- SR 3.6.3.2.1 is an equivalent test to SR 3.6.2.4 and is performed on a 184 day frequency.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.3.3 Combustible Gas Mixing System

The combustible gas mixing system is a redundant system whose compressors force containment air into the drywell region during post-accident conditions in order to dilute the hydrogen concentration within the drywell. Drywell pressure increases until air is forced through the suppression pool weir wall vents and back into containment.

SR 3.6.3.3.2 Verify each combustible gas mixing subsystem flow rate is ≥ 500 scfm

This SR verifies that the flow rate of each combustible gas mixing subsystem is ≥ 500 scfm. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- There are two redundant and independent combustible gas mixing systems such that a single-failure will not prevent system operation.
- SR 3.6.3.3.1 is performed every 92 days and demonstrates that each combustible gas mixing subsystem is operable for ≥ 15 minutes. While this SR does not verify system flow rate, it verifies system operation and would identify significant system problems or failures.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.4.3 Annulus Exhaust Gas Treatment (AEGT) System

The AEGT system ensures that radioactive materials that leak from the primary containment into the secondary containment following an accident are filtered and adsorbed prior to being exhausted to the environment.

SR 3.6.4.3.3 Verify each AEGT subsystem actuates on an actual or simulated initiation signal

This SR verifies that each AEGT subsystem will actuate on an actual or simulated initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- There are two redundant and independent AEGT subsystems such that a single-failure will not prevent system operation.
- SR 3.6.3.3.1 is a monthly surveillance that requires each AEGT subsystem to be started and operated for > 10 hours with heaters operating. This test verifies system operation and would identify significant system problems or failures.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.5.3 Drywell Isolation Valves

SR 3.6.5.3.5 Verify each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal

This SR verifies that each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The drywell isolation system active components and power supplies are designed with redundancy to ensure that a single-failure will not prevent system operability.
- The drywell isolation valves are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable. These tests, which verify valve stroke capability, would detect major degradation that could impact valve operation.
- The actual or simulated isolation signal is equivalent to a logic system functional test. Extension of the logic system functional test has previously been justified.
- The licensee's review of the surveillance test history has identified a single case where the valve failed to close. This failure was attributed to logic relay contacts and was not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.6.5.6 Drywell Vacuum Relief System

Following a postulated LOCA, non-condensible gases (air) escape from the drywell and are replaced by steam. When the drywell cools and depressurizes, non-condensibles are transferred from the primary containment back to the drywell via the drywell vacuum relief system. The only safety function of the drywell vacuum relief system is to provide drywell to containment isolation during the LOCA blowdown to prevent bypass leakage into containment. The design of the drywell vacuum relief system consists of two 10-inch vacuum relief lines. Each vacuum relief line has an inner 10-inch simple check valve that serves as the vacuum breaker device and an outer 10-inch motor operated isolation valve.

SR 3.6.5.6.3 Verify the opening pressure differential of each drywell vacuum breaker is ≤ 0.5 psid, and the allowable value of each associated isolation valve is ≤ 0.810 inches water gauge dp

This SR ensures that the drywell vacuum relief system is capable of performing its intended function. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The drywell vacuum relief system has built-in redundancy. There are two subsystems capable of providing the vacuum relief function.
- The Rosemount trip units are functionally tested monthly. These tests verify their setpoints, and if necessary, the units are recalibrated. Therefore, an increase in the surveillance interval to accommodate a 24-month fuel cycle does not affect the Rosemount trip units with respect to drift.
- The vacuum breaker open setpoint is not assumed in any safety analysis and is not required to function for any design function. There are no time-based conditions that would change the positioning of the vacuum breaker based on the extended SR frequency.
- The licensee's review of surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.1 Emergency Service Water (ESW) System - Divisions 1 and 2

The Division 1 and 2 ESW subsystems take suction from Lake Erie and consist of two independent cooling water headers along with their associated pump, piping, valves, and instrumentation. Any two of the three divisional ESW pumps (Division 1, 2 or 3) are sized to provide sufficient cooling capacity to support the required safety-related systems during plant shutdown following a LOCA.

SR 3.7.1.2 Verify each required Division 1 and 2 ESW subsystem actuates on an actual or simulated initiation signal

This SR verifies that each required Division 1 and 2 ESW subsystem actuates on an actual or simulated initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The active components and power supplies of the ESW system are designed with redundancy to ensure that a single-failure will not prevent system operability.
- The pumps and valves of the ESW system are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable. These tests, which verify pump and valve operability, would detect major degradation that could impact system operation.
- The actual or simulated isolation signal is equivalent to a logic system functional test. Extension of the logic system functional test has been previously justified.
- The licensee's review of the surveillance test history identified two separate failures in the logic relay circuitry. The failures were not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.2 Emergency Service Water (ESW) System - Division 3

The Division 3 ESW system takes suction from Lake Erie and provides cooling water for the removal of heat from components of the Division 3 HPCS system. Any two of the three divisional ESW pumps (Division 1, 2 or 3) are sized to provide sufficient cooling capacity to support the required safety-related systems during plant shutdown following a LOCA.

SR 3.7.2.2 Verify the Division 3 ESW subsystem actuates on an actual or simulated initiation signal

This SR verifies that the Division 3 ESW subsystem actuates on an actual or simulated initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The active components and power supplies of the ESW system are designed with redundancy to ensure that a single-failure will not prevent system operability.
- The pumps and valves of the ESW system are tested on a quarterly basis by the Inservice Testing program or have justifications and reliefs to document why testing on an extended frequency is acceptable. These tests, which verify pump and valve operability, would detect major degradation that could impact system operation.
- The actual or simulated isolation signal is equivalent to a logic system functional test. Extension of the logic system functional test has been previously justified.
- The licensee's review of the surveillance test history did not identify any test failures that

would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.3 Control Room Emergency Recirculation (CRER) System

The CRER system provides a radiologically controlled environment from which the plant can be safety operated following a LOCA. When the normal control room ventilation system is in operation, a slight positive pressure is maintained between the control room and the outside atmosphere. When the CRER system is actuated, the intake and exhaust dampers of the control room ventilation system are closed. A positive pressure is not maintained in the control room during CRER system operation.

SR 3.7.3.3 Verify each CRER subsystem actuates on an actual or simulated initiation signal

The SR verifies that each CRER subsystem actuates on an actual or simulated initiation signal. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The active components and power supplies of the CRER system are designed with redundancy to ensure that a single-failure will not prevent system operability.
- SR 3.7.3.1 is conducted monthly and requires that each CRER subsystem be operated for ≥ 10 hours with the heaters operating. These tests would detect significant failures affecting system operation.
- The actual or simulated isolation signal is equivalent to a logic system functional test. Extension of the logic system functional test has been previously justified.
- The licensee's review of the surveillance test history identified two separate failures in the logic relay circuitry which were not repetitive in nature. Therefore, there are no test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.7.3.4 Verify leakage through the outside air intake and exhaust dampers is within limits

The SR verifies that leakage through the outside air intake and exhaust dampers is within limits. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The active components and power supplies of the CRER system are designed with redundancy to ensure that a single-failure will not prevent system operability.
- SR 3.7.3.1 is conducted monthly and requires that each CRER subsystem be operated for ≥ 10 hours with the heaters operating. These tests would detect significant failures affecting system operation.

- The actual or simulated isolation signal is equivalent to a logic system functional test. Extension of the logic system functional test has been previously justified.
- Extending the surveillance interval to 24 months is consistent with most other valve leak tests (Appendix J, Option B) and significant degradation of the dampers is not expected over a 24-month time period.
- The licensee's review of the surveillance test history identified one failure in which the intake dampers were exhibiting excessive leakage as a result of being dirty and out of adjustment. This failure is not repetitive in nature. Therefore, the surveillance test history would not invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.4 Control Room Heating, Ventilating, and Air Conditioning (HVAC) System

The control room HVAC system provides a suitable environment for continuous personnel occupancy and ensures the operability of control room equipment and instruments under normal and accident conditions.

SR 3.7.4.1 Verify each control HVAC subsystem has the capability to remove the assumed heat load

The SR verifies that each control HVAC subsystem has the capability to remove the assumed heat load. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The active components and power supplies of the control room HVAC system are designed with redundancy to ensure that a single-failure will not prevent system operability.
- The control room HVAC system is normally operating, thus any major system degradation of the cooling function would be readily detected.
- Any changes to the control room heat load would be evaluated for its effect on safe shutdown, station blackout, and other more restrictive concerns.
- The licensee's review of the surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.6 Main Turbine Bypass System

The main turbine bypass system is designed to automatically control steam pressure when reactor steam generation exceeds turbine requirements during unit startup, sudden load reduction, and cooldown. It allows excess steam flow from the reactor to the condenser without going through the turbine.

SR 3.7.6.2 System Functional Test

This SR ensures that the turbine bypass system will function as designed in response to steam demand changes within the capability of the system. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- SR 3.7.6.1 requires that each main turbine bypass valve be completely cycled once every month. These tests, which demonstrate that the valves are mechanically operable, will continue to be performed monthly and would detect significant failures affecting system operation.
- The circuitry and actuating logic is designed to be highly reliable and is not expected to degrade over an operating cycle.
- The licensee's review of the surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.7.6.3 Verify the turbine bypass system response time is within limits

This SR ensures that the system functions within the response time assumed in the analyses of the applicable analyzed event. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- SR 3.7.6.1 requires that each main turbine bypass valve be completely cycled once every month. These tests, which demonstrate that the valves are mechanically operable, will continue to be performed monthly and would detect significant failures affecting system operation.
- The circuitry and actuating logic is designed to be highly reliable and is not expected to degrade over an operating cycle.
- The licensee's review of the surveillance test history did not identify any test failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.9 Fuel Handling Building Ventilation Exhaust System

The function of the fuel handling building (FHB) ventilation exhaust system is to ensure that radioactive materials that escape from fuel assemblies damaged following a design basis fuel handling accident are filtered and adsorbed prior to exhausting to the environment. The FHB ventilation exhaust system consists of three fully redundant, 50% capacity subsystems.

SR 3.7.9.3 System Functional Test

The SR ensures that the FHB ventilation exhaust system functions as designed. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- The FHB ventilation exhaust system, including its active components and actuating logic, is designed to be single-failure proof and is, therefore, highly reliable.
- SR 3.7.9.1 requires that each FHB subsystem be demonstrated operable on a monthly basis by operating each subsystem for ≥ 10 continuous hours with heaters operating. These tests will continue to be performed monthly and would detect significant failures affecting system operation.
- The FHB ventilation exhaust system is operated during normal plant operation to maintain ventilation and temperature control in the FHB. This additional operation ensures that a significant portion of the circuitry is operating properly and will detect significant system failures.
- The licensee's review of the surveillance test history identified one failure in which the unit failed the charcoal adsorber bypass leakage test. This failure is not repetitive in nature. Therefore, the surveillance test history would not invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.7.10 Emergency Closed Cooling Water (ECCW) System

The ECCW system provides a heat sink for the removal of process and operating heat from safety-related components during a design basis accident. The ECCW system, which is maintained in a standby condition during normal plant operation, is used when the plant is in hot standby condition and during normal plant shutdown. The ECCW system consists of two independent, 100% capacity subsystems.

SR 3.7.10.2 Verify each required ECCW automatic valve servicing safety-related equipment actuates to the correct position on an actual or simulated actuation signal

This SR ensures that the ECCW automatic valves will function as designed in response to a design basis accident. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

System availability during the operating cycle is assured by:

- Operation of the ECCW automatic valves is verified every quarter in accordance with the Inservice Testing program. This testing ensures that a significant portion of the circuitry is operating properly and demonstrates that the valves are mechanically operable.
- The ECCW system is designed to be single-failure proof and is, therefore, highly reliable.
- The licensee's review of the surveillance test history identified two failures involving the

failure of two separate relays in the logic circuitry. These failures were not considered to be repetitive in nature. Therefore, the surveillance test history would not invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

TS 3.8.1 AC Sources - Operating

The plant Class 1E AC electrical power distribution system AC sources consist of the offsite power sources and the onsite standby power sources. The onsite AC power sources consist of the Division 1, 2, and 3 emergency diesel generators (DGs). The engineered safety feature (ESF) systems of any two of the three divisions provide for the minimum safety functions necessary to shut down the unit and maintain it in a safe shutdown condition.

The staff's evaluation for SRs 3.8.1.8 through and including 3.8.1.19 have been grouped together.

SR 3.8.1.8 Verify manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.

This SR verifies manual transfer of each 4.16 kV ESF bus power supply from the normal offsite circuit to the alternate offsite circuit to demonstrate the operability of the alternate source. One normal offsite circuit consists of the Unit 1 startup transformer to the Class 1E 4.16 kV ESF buses. The second normal offsite circuit consists of the Unit 2 startup transformer to the Class 1E 4.16 kV ESF buses. Several additional paths from the transmission system to the Class 1E system are available as alternate offsite power sources if loss of a startup transformer occurs. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

SR 3.8.1.9 Verify each DG rejects a load greater than or equal to its associated single largest post-accident load. Following load rejection, engine speed is maintained less than nominal plus 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal, whichever is less.

This SR demonstrates each DG's capability to reject the single largest load while maintaining a specified margin to the engine overspeed trip setpoint. The SR also verifies the proper operation of the governor and load control circuits. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.10 Verify each DG operating at a power factor of $\leq$ 0.9 does not trip and voltage is maintained $\leq$ 4784 V for Division 1 and 2 DGs and $\leq$ 5000 V for Division 3 DG during and following a load rejection of a load $\geq$ 5600 kW for Division 1 and 2 DGs and $\geq$ 2600 kW for Division 3 DG.

This SR demonstrates each DG's capability, while operating at $\leq$0.9 power factor, to reject full load without tripping and without exceeding predetermined voltage setpoints. The SR also

verifies the proper operation of the governor and load control circuits. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.11 Verify on an actual or simulated loss of offsite power signal:
(A) De-energization of emergency buses;
(B) Load shedding from emergency buses for Divisions 1 and 2; and
(C) DG auto-starts from standby condition and:
1. energizes permanently connected loads in ≤ 10 seconds for Division 1 and 2 DGs and ≤ 13 seconds for Division 3,
2. energizes auto-connected loads for Divisions 1 and 2,
3. maintains steady state voltage ≥ 3900 V and ≤ 4400 V,
4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and
5. supplies permanently connected and auto-connected loads for ≥ 5 minutes

This SR demonstrates each DG's operation during an actual or simulated loss-of-offsite power signal. This test verifies all actions encountered from the loss of offsite power, including shedding of the Division 1 and 2 nonessential loads and energizing the emergency buses and respective loads from the DG. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.12 Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each DG auto-starts from standby condition and:
A. In ≤ 10 seconds for Divisions 1 and 2, and ≤ 13 seconds for Division 3 after auto-start and during tests, achieves voltage ≥ 3900 V and ≤ 4400 V;
B. In ≤ 10 seconds for Divisions 1 and 2, and ≤ 13 seconds for Division 3 after auto-start and during tests, achieves frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and
C. Operates for ≥ 5 minutes.

This SR demonstrates each DG's operation during a loss-of-offsite power actuation test signal in conjunction with an Emergency Core Cooling System (ECCS) initiation signal. The five minute time provides sufficient time to demonstrate stability. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.13 Verify each DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except:
A. Engine overspeed; and
B. Generator differential current.

This SR demonstrates that each DG non-critical protective trip is bypassed on an actual or simulated ECCS initiation signal and that critical protective functions trip the DG. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR

revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.14 Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours:
A. For ≥ 2 hours loaded ≥ 6800 kW and ≤ 7000 kW for Division 1 and 2 DGs, and ≥ 2860 kW for Division 32 DG; and
B. For the remaining hours of the test loaded ≥ 5600 kW and ≤ 7000 kW for Division 1 and 2 DGs, and ≥ 2600 kW for Division 3 DG.

This SR demonstrates that each DG operating at ≤ 0.9 power factor operates for ≥ 24 hours. For ≥ 2 hours DG is loaded to ≥ 6800 kW and ≤ 6800 kW for Division 1 and 2 DGs and ≥ 2860 for Division 3 DG. For the remaining hours of the test loaded to ≥ 5600 kW and ≤ 7000 kW for Division 1 and 2 DGs and, ≥ 2600 kW for Division 3 DG. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.15 Verify each DG starts and achieves, in ≤ 10 seconds for Divisions 1 and 2 and ≤ 13 seconds for Division 3, voltage ≥ 3900 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.

This SR demonstrates restart capability of each DG from a hot condition after it has operated ≥1 hour loaded to ≥5600 kW and ≤7000 kW for Division 1 and 2 DGs, and ≤2600 kW for Division 3 DG and achieves the required voltage and frequency within the required time. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.16 Verify each DG:
A. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;
B. Transfers loads to offsite power source; and
C. Returns to ready-to-load operation.

This SR demonstrates that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and that the DG can be returned to ready to load status when offsite power is restored. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.17 Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by:
A. Returning DG to ready-to-load operation; and
B. Automatically energizing the emergency loads from offsite power.

This SR demonstrates that an actual or simulated ECCS initiation signal is capable of overriding the test mode feature to return each DG to ready-to-load operation to ensure that the DG

availability under accident conditions is not compromised as a result of testing. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.18 Verify for Division 1 and 2 DGs, the sequence time is within ± 10% of design for each load sequence timer.

This SR for Division 1 and 2 DGs verifies that the sequence time is within ±10 percent of the design for each load sequence timer. Under accident conditions, loads are sequentially connected to the bus by the time delay relays. The time delay relays control the permissive and starting signals to motor breakers to prevent overloading of the bus power supply due to high motor starting currents. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

SR 3.8.1.19 Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCW initiation signal:

A. De-energization of emergency buses;
B. Load shedding from emergency buses for Divisions 1 and 2; and
C. DG auto-starts from standby condition and:
   1. energizes permanently connected loads in ≤ 10 seconds for Divisions 1 and 2 and ≤ 13 seconds for Division 3,
   2. energizes auto-connected emergency loads (for Division 3, verify energization in ≤ 13 seconds),
   3. achieves steady state voltage ≥ 3900 V and ≤ 4400 V,
   4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and
   5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.

This SR demonstrates operation of each DG during a loss-of-offsite power test signal coincident with an ECCS initiation. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.108 to perform the DG test during the plant pre-operational test program and at least once every 18 months.

AC Source system availability during the operating cycle is assured by:

- SR 3.8.1.2 requires that each DG be tested for operability once every 31 days. This testing, which is not being changed, will provide prompt identification of any substantial DG degradation or failure.
- SR 3.8.1.7 requires that each DG be fast start tested once every 184 days. This test, which is not being changed, will provide prompt identification of any substantial DG degradation or failure.
- DGs are not operated outside of the monthly operability tests in order to minimize wear related degradation.
- DG attributes subject to degradation due to aging, such as fuel oil quality, are subject to its requirements for replenishment and testing.

- An evaluation of known failures did not identify any time-based elements that would invalidate the conclusion that the increased operating cycle will have a small, if any, impact on system reliability.
- The licensee's review of the surveillance test history identified separate failures involving a broken engine control switch cover and logic relay circuitry. These failures were not considered to be repetitive in nature. Therefore, the surveillance test history would not invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle.

Based on this information, the staff concludes that the proposed changes for SRs 3.8.1.8 through SRs 3.8.1.19 on plant safety are small and, therefore, acceptable.

TS 3.8.4 DC Sources - Operating

The station DC electrical power system provides the AC emergency power system with control power along with both motive and control power to selected safety-related equipment. The 125 VDC electrical power system consists of three independent Class 1E DC electrical power subsystems, Divisions 1, 2, and 3. Two divisions of batteries are required for the mitigation of an accident in the event of a loss of all offsite power and a worst case single-failure.

SR 3.8.4.3 Verify battery cells, cell plates and racks show no visual indication of physical damage or abnormal deterioration

The SR ensures the availability of necessary power to ESF systems from Class 1E battery sources. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

By letter dated January 17, 2000, the staff expressed concern over the proposed extension for this SR and noted that this surveillance can be conducted during power operation and not necessarily linked to the overall proposal to implement a 24-month fuel cycle.

By letter dated March 1, 2000, the licensee stated that the surveillance instruction which implements SR 3.8.4.1 (a weekly SR that verifies battery terminal voltage is above a prescribed limit) contains a requirement to perform a visual inspection of the battery cells and the interconnecting hardware. The surveillance instruction which implements SR 3.8.4.2 (a quarterly SR that verifies the battery terminals and connectors are free from visible corrosion or the battery connection resistance is below a prescribed limit) contains a requirement to perform a detailed inspection of each battery. The detailed inspection checks the battery cell plates for signs of sulphation, copper contamination, and excessive plate expansion. Battery cells are also inspected for sediment accumulation and signs of post seal deterioration. If deficiencies are found, the surveillance instruction requires the conditions to be corrected.

The licensee's review of the surveillance test history did not identify any failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle. In addition, the Perry's Unit 2 batteries and chargers are maintained operable under the plant's TSs and are available to support Unit 1 needs.

Based on the above, the staff concludes that the performance and frequency of SR 3.8.4.1 and SR 3.8.4.2 provides equivalent testing to that required by SR 3.8.4.3, and that extending the frequency of SR 3.8.4.3 from the current 18 months to 24 months will not adversely affect the

battery operability. Therefore, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.8.4.4 Remove visible corrosion, and verify battery cell to cell and terminal connections are coated with anti-corrosion material

The SR ensures the availability of necessary power to ESF systems from Class 1E battery sources. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

By letter dated January 17, 2000, the staff expressed concern over the proposed extension for this SR and noted that this surveillance can be conducted during power operation and not necessarily linked to the overall proposal to implement a 24-month fuel cycle. In a letter dated March 1, 2000, the licensee stated that the weekly and quarterly surveillance performed by SR 3.8.4.1 and SR 3.8.4.2 requires visual inspections of the battery cell to cell and terminal connections. If deficiencies are found, the surveillance instruction requires the conditions to be corrected.

The licensee's review of the surveillance test history did not identify any failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle. In addition, the Perry's Unit 2 batteries and chargers are maintained operable under the plant's TSs and are available to support Unit 1 needs.

Based on the above, the staff concludes that the performance and frequency of SR 3.8.4.1 and SR 3.8.4.2 provides equivalent testing to that required by SR 3.8.4.4, and that extending the frequency of SR 3.8.4.4 from the current 18 months to 24 months will not adversely affect the battery operability. Therefore, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.8.4.5 Verify battery connection resistance is
≤ 5.0 E-5 ohm for inter-cell connections,
≤ 5.0 E-5 ohm for inter-rack connections,
≤ 5.0 E-5 ohm for inter-tier connections,
≤ 5.0 E-5 ohm for terminal connections;
for Division 1 and Division 2

and
≤ 1.0E-4 ohm for inter-cell connections,
≤ 1.0E-4 ohm for inter-rack connections,
≤ 1.0E-4 ohm for inter-tier connections,
≤ 1.0E-4 ohm for terminal connections,
for Division 3.

The SR ensures the availability of necessary power to ESF systems from Class 1E battery sources. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

By letter dated January 17, 2000, the staff expressed concern over the proposed extension for this SR and noted that this surveillance can be conducted during power operation and not necessarily linked to the overall proposal to implement a 24-month fuel cycle. By letter dated March 1, 2000, the licensee stated that although connection resistance measurements are not

typically performed at other than the 18-month interval, quarterly surveillance performed by SR 3.8.4.2 requires visual inspections of the battery cell to cell and terminal connections. If there is any indication of visible corrosion at the battery connections, the surveillance instruction requires that resistance checks be performed to verify that the connection resistance readings are within acceptable limits. These measurements will be made at any time there is a question regarding connection integrity.

The licensee's review of the surveillance test history did not identify any failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle. In addition, the Perry's Unit 2 batteries and chargers are maintained operable under the plant's TSs and are available to support Unit 1 needs.

Based on the above, the staff concludes that the performance and frequency of SR 3.8.4.2 provides equivalent testing to that required by SR 3.8.4.5, and that extending the frequency of SR 3.8.4.5 from the current 18 months to 24 months will not adversely affect the battery operability. Therefore, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.8.4.6 Verify each required Division 1 and 2 battery charger supplies ≥ 400 amps at ≥ 125 V for ≥ 8 hours; and each required Division 3 battery charger supplies ≥ 50 amps at ≥ 125 V for ≥ 8 hours

The SR ensures the availability of the battery chargers. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period.

TSs limit the extent and duration of inoperable DC sources. As previously described, SR 3.8.4.1 is performed weekly to verify battery terminal voltage and SR 3.8.4.2 is performed quarterly to inspect for visible corrosion at battery terminals and connectors. These surveillances will provide prompt identification of any substantial degradation or failure of the battery chargers.

The licensee's review of the surveillance test history did not identify any failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle. In addition, the Perry's Unit 2 batteries and chargers are maintained operable under the plant's TSs and are available to support Unit 1 needs.

Therefore, based on the above information, the staff concludes that the proposed change on plant safety is small and, therefore, acceptable.

SR 3.8.4.7 Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test

This surveillance requires verification that battery capacity is adequate to supply, and maintain in operable status, the required emergency loads for the design duty cycle when subjected to a battery service test. The surveillance test interval is being increased from once every 18 months to once every 24 months, for a maximum of 30 months including the 25% grace period. In addition, this surveillance contains a NOTE which states that SR 3.8.4.8 (battery performance discharge test) may be performed in lieu of SR 3.8.4.7 once per 60 months. The licensee proposed that the interval for the NOTE be increased from once every 60 months to

once every 72 months, for a maximum of 90 months including the 25% grace period. Revision of the SR revises the licensee's commitment to Regulatory Guide 1.32 and 1.129 to perform the battery service test during refueling outages, or at some other outage, with intervals between tests not to exceed 18 months.

By letter dated January 17, 2000, the staff expressed concern over the proposed extension for the performance of the battery service test and noted that if a performance discharge test is substituted as allowed by the NOTE to SR 3.8.4.7, a four year period could elapse between performance of successive battery service tests. The staff questioned whether the performance discharge test envelops the battery service test. In addition, the staff informed the licensee that NUREG-1434, Revision 1, "Standard Technical Specifications for General Electric Plants BWR/6," substitutes a modified performance discharge test for the performance discharge test for Note 1 to SR 3.8.4.7. (The Perry licensee adopted NUREG-1434, Revision 0, when converting to the improved standard technical specifications.) The modified performance discharge test is typically a simulated duty cycle consisting of just two rates; the one-minute rate published for the battery or the largest current load of duty cycle followed by the test rate employed for the performance test. Thus, the modified discharge test will envelope the full service test without compromising the results of the discharge test.

By letter dated March 1, 2000, the licensee stated that the battery performance discharge test is conducted at the battery 2-hour discharge rate corrected for temperature. For the Division 1 and 2 batteries, the battery performance discharge rate is 390 to 400 amps for two hours. This test is far more demanding than the battery service test which uses the 2-hour duty cycle, which applies loads of 120 amps for 116 minutes, 300 amps for 3 minutes, and 500 amps for 1 minute. The licensee states that while the duty cycle shows the highest load component is 500 amps during the first minute, the highest calculated load for the first minute is 370 amps for Division 1 and 357 amps for Division 2. Regarding Division 3 batteries, the licensee stated that these 100 amp hour batteries are being replaced with 250 amp hour batteries this year. In addition, the two-hour rating of Division 3 battery will also exceed the highest peak of the duty cycle. Thus, the performance discharge test requirements will far exceed the demand of the service test in all cases.

TSs limit the extent and duration of inoperable DC sources. As previously described, SR 3.8.4.1 is performed weekly to verify battery terminal voltage and SR 3.8.4.2 is performed quarterly to inspect for visible corrosion at battery terminals and connectors. These surveillances will provide prompt identification of any substantial degradation or failure of the station batteries. The licensee also tracks all load additions and deletions and verifies that any load change is well within the capacity of the battery based on the previous battery service test or battery performance test.

The licensee's review of the surveillance test history did not identify any failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month operating cycle. In addition, the Perry's Unit 2 batteries and chargers are maintained operable under the plant's TSs and are available to support Unit 1 needs.

Based on the above information, the staff concludes that the proposed change (i.e., performing the battery service test at 24-month in lieu of 18-month intervals) on plant safety is small and, therefore, acceptable. With regard to revising the NOTE to SR 3.8.4.7, the staff concluded that revising the frequency from 60 months to 72 months was outside the scope of GL 91-04 and could not be similarly justified. By letter dated March 20, 2000, the licensee withdrew their request to revise the NOTE.

SR 3.8.4.8 Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test

The battery performance test is intended to determine overall battery degradation due to age and usage. The licensee proposed to increase the surveillance test interval for this SR from once every 60 months to once every 72 months, for a maximum of 90 months including the 25% grace period.

The staff concluded that revising the frequency of the performance discharge test from 60 months to 72 months was outside the scope of GL 91-04 and could not be similarly justified. By letter dated January 17, 2000, the licensee withdrew their request to modify SR 3.8.4.8.

Administrative Controls

The licensee provided the following clarifications to the Administrative Controls section of the TSs:

TS 5.5.2 Primary Coolant Sources Outside Containment

The TS references a) preventive maintenance and periodic visual inspection requirements, and b) integrated leak test requirements for each system at refueling cycle intervals or less. The integrated leak test requirements will not change. However, the refueling cycle will be 24 months in lieu of 18 months.

TS 5.5.6 Inservice Testing Program

The test frequencies referenced in the inservice testing program will not change. However, the refueling cycle will be 24 months in lieu of 18 months.

TS 5.5.7 Ventilation Filter Testing Program (VFTP)

The VFTP references test frequencies as specified in Regulatory Guide 1.52, Reference 2. The Regulatory Guide requires inplace testing on a 18-month basis. This frequency is not being revised as the filter testing can be performed on-line.

TS 5.5.12 Primary Containment Leakage Rate Testing Program

The Perry Primary Containment Leakage Rate Testing Program is in compliance with 10 CFR 50.54(o) and 10 CFR Part 50, Appendix J, Option B. These requirements are consistent with a 24-month fuel cycle. Therefore, testing frequencies are not being changed.

The staff finds the above clarifications to the Administrative Controls section of the TSs to be consistent with GL 91-04 and, therefore, acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (64 FR 46438). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Hukam Garg, NRR
Om Chopra, NRR
Douglas Pickett, NRR

Date: August 29, 2000

August 29, 2000

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Mr. John K. Wood
Vice President - Nuclear, Perry
FirstEnergy Nuclear Operating Company
P.O. Box 97, A200
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REVISIONS OF VARIOUS SURVEILLANCE REQUIREMENTS TO SUPPORT A 24-MONTH OPERATING CYCLE (TAC NO. MA5930)

Dear Mr. Wood:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. This amendment revises the Technical Specifications in response to your application dated June 17, 1999 (PY-CEI/NRR-2398L), as supplemented by submittals dated January 17 (PY-CEI/NRR-2449L), March 1 (PY-CEI/NRR-2468L), March 20 (PY-CEI/NRR-2479L), May 9 (PY-CEI/NRR-2484L), and August 21, 2000 (PY-CEI/NRR-2512L).

This amendment revises surveillance requirements to support a 24-month operating cycle.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

/RA/

Douglas V. Pickett, Sr. Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures: 1. Amendment No. 115 to License No. NPF-58
2. Safety Evaluation

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SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REVISIONS OF VARIOUS SURVEILLANCE REQUIREMENTS TO SUPPORT A 24-MONTH OPERATING CYCLE (TAC NO. MA5930)

Dear Mr. Wood:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. This amendment revises the Technical Specifications in response to your application dated June 17, 1999 (PY-CEI/NRR-2398L), as supplemented by submittals dated January 17 (PY-CEI/NRR-2449L), March 1 (PY-CEI/NRR-2468L), March 20 (PY-CEI/NRR-2479L), and May 9, 2000 (PY-CEI/NRR-2484L).

This amendment revises surveillance requirements to support a 24-month operating cycle.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Douglas V. Pickett, Sr. Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures: 1. Amendment No. to License No. NPF-58
2. Safety Evaluation

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*See EMarinos to AMendiola memo of 2/22/00
**See DThatcher to SBajwa memo of 4/19/00