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

August 17, 2015

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-425, RELOCATE SPECIFIC SURVEILLANCE FREQUENCIES TO A LICENSEE CONTROLLED PROGRAM (TAC NOS. MF4065 and MF4066)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 314 to Renewed Facility Operating License No. DPR-53, and Amendment No. 292 to Renewed Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated May 1, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14125A015), as supplemented by letters dated May 1, 2015 (ADAMS Accession No. ML15126A041), and July 30, 2015 (ADAMS Accession No. ML15212A902).

These amendments revise the TSs to require that changes to specific surveillance frequencies will be made in accordance with Nuclear Energy Institute 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies" (ADAMS Accession No. ML071360456). The change is the adoption of NRC-approved Technical Specification Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF [Risk-Informed TSTF] Initiative 5b" (ADAMS Accession No. ML090850642). The *Federal Register* (FR) notice published on July 6, 2009 (74 FR 31996), announced the availability of TSTF-425, Revision 3.

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

Sincerely,

Alexander N. Chereskin, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures:
1. Amendment No. 314 to DPR-53
2. Amendment No. 292 to DPR-69
3. Safety Evaluation

cc w/encls: Distribution via Listserv

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

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1

CALVERT CLIFFS NUCLEAR POWER PLANT, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-317

Amendment No. 314
Renewed License No. DPR-53

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

   A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee), dated May 1, 2014, as supplemented by letters dated May 1, 2015, and July 30, 2015, 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 Renewed Facility Operating License No. DPR-53 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 314, are hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael Dudek, Acting Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and Technical Specifications

Date of Issuance: August 17, 2015

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

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

CALVERT CLIFFS NUCLEAR POWER PLANT, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-318

Amendment No. 292
Renewed License No. DPR-69

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

   A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee), dated May 1, 2014, as supplemented by letters dated May 1, 2015, and July 30, 2015, 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 Renewed Facility Operating License No. DPR-69 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 292, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael Dudek, Acting Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: August 17, 2015

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 314 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 292 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3	3

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 Pages	Insert Pages
1.1-6	1.1-6
5.5-20	5.5-20
3.1.1-3	3.1.1-3
3.1.4-3	3.1.4-3
3.1.4-4	3.1.4-4
3.1.5-2	3.1.5-2
3.1.6-3	3.1.6-3
3.1.7-2	3.1.7-2
3.1.8-2	3.1.8-2
3.2.1-2	3.2.1-2
3.2.1-3	3.2.1-3
3.2.3-2	3.2.3-2
3.2.4-2	3.2.4-2
3.2.5-1	3.2.5-1
3.3.1-5	3.3.1-5
3.3.1-6	3.3.1-6
3.3.1-7	3.3.1-7
3.3.1-8	3.3.1-8
3.3.2-4	3.3.2-4
3.3.3-2	3.3.3-2
3.3.3-3	3.3.3-3
3.3.4-4	3.3.4-4
3.3.5-3	3.3.5-3
3.3.6-3	3.3.6-3
3.3.7-2	3.3.7-2
3.3.7-3	3.3.7-3

Remove Pages	Insert Pages
3.3.7-4	3.3.7-4
3.3.8-2	3.3.8-2
3.3.8-3	3.3.8-3
3.3.9-2	3.3.9-2
3.3.9-3	3.3.9-3
3.3.10-3	3.3.10-3
3.3.11-2	3.3.11-2
3.3.12-2	3.3.12-2
3.4.1-2	3.4.1-2
3.4.3-2	3.4.3-2
3.4.4-1	3.4.4-1
3.4.5-2	3.4.5-2
3.4.5-3	3.4.5-3
3.4.6-3	3.4.6-3
3.4.7-3	3.4.7-3
3.4.8-2	3.4.8-2
3.4.8-3	3.4.8-3
3.4.9-2	3.4.9-2
3.4.11-3	3.4.11-3
3.4.11-4	3.4.11-4
3.4.12-5	3.4.12-5
3.4.12-6	3.4.12-6
3.4.12-7	3.4.12-7
3.4.12-8	3.4.12-8
3.4.13-2	3.4.13-2
3.4.13-3	3.4.13-3
3.4.14-3	3.4.14-3
3.4.14-4	3.4.14-4
3.4.15-2	3.4.15-2
3.4.15-3	3.4.15-3
3.4.16-1	3.4.16-1
3.4.17-2	3.4.17-2
3.4.17-3	3.4.17-3
3.5.1-2	3.5.1-2
3.5.1-3	3.5.1-3
3.5.2-2	3.5.2-2
3.5.2-3	3.5.2-3
3.5.2-4	3.5.2-4
3.5.4-2	3.5.4-2
3.5.5-1	3.5.5-1
3.5.5-2	3.5.5-2
3.6.2-5	3.6.2-5
3.6.3-5	3.6.3-5
3.6.3-6	3.6.3-6
3.6.4-1	3.6.4-1
3.6.5-1	3.6.5-1
3.6.6-3	3.6.6-3

Remove Pages	Insert Pages
3.6.6-4	3.6.6-4
3.6.8-2	3.6.8-2
3.7.3-4	3.7.3-4
3.7.3-5	3.7.3-5
3.7.4-2	3.7.4-2
3.7.5-2	3.7.5-2
3.7.6-2	3.7.6-2
3.7.6-3	3.7.6-3
3.7.7-2	3.7.7-2
3.7.8-5	3.7.8-5
3.7.9-2	3.7.9-2
3.7.11-2	3.7.11-2
3.7.12-2	3.7.12-2
3.7.13-1	3.7.13-1
3.7.14-1	3.7.14-1
3.7.16-1	3.7.16-1
3.7.18-2	3.7.18-2
3.8.1-10	3.8.1-10
3.8.1-11	3.8.1-11
3.8.1-12	3.8.1-12
3.8.1-13	3.8.1-13
3.8.1-14	3.8.1-14
3.8.1-15	3.8.1-15
3.8.1-16	3.8.1-16
3.8.1-17	3.8.1-17
3.8.3-4	3.8.3-4
3.8.3-5	3.8.3-5
3.8.4-2	3.8.4-2
3.8.4-3	3.8.4-3
3.8.4-4	3.8.4-4
3.8.6-3	3.8.6-3
3.8.6-4	3.8.6-4
3.8.7-2	3.8.7-2
3.8.8-2	3.8.8-2
3.8.9-2	3.8.9-2
3.8.10-2	3.8.10-2
3.9.1-1	3.9.1-1
3.9.2-2	3.9.2-2
3.9.3-2	3.9.3-2
3.9.4-3	3.9.4-3
3.9.5-4	3.9.5-4
3.9.5-5	3.9.5-5
3.9.6-1	3.9.6-1

1.1 Definitions

	verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full length control element assemblies (CEAs) (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

5.5 Programs and Manuals

the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and assessing the CRE boundary as required by paragraphs c and d respectively.

5.5.18 Not Used

5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is within limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.1.1.2	----------NOTE---------- Only required in MODE 5 with pressurizer level < 90 inches. ----------	
	Verify Reactor Coolant System level is above the bottom of the hot leg nozzles.	Once within 1 hour after achieving MODE 5 with pressurizer level < 90 inches AND 12 hours thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition C, D, or E not met. OR One or more CEAs untrippable. OR Two or more CEAs misaligned by > 15 inches.	F.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify the indicated position of each CEA to be within 7.5 inches of all other CEAs in its group.	Within 1 hour following any CEA movement of > 7.5 inches AND In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.4.2	Verify the CEA motion inhibit is OPERABLE.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3	Verify the CEA deviation circuit is OPERABLE.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.4	Verify CEA freedom of movement (trippability) by moving each individual CEA that is not fully inserted into the reactor core 7.5 inches in either direction.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.5	Perform a CHANNEL FUNCTIONAL TEST of the reed switch position transmitter channel.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.6	Verify each CEA drop time is $\leq$ 3.1 seconds.	Prior to reactor criticality, after each removal of the reactor head

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One shutdown CEA withdrawn ≥ 121.5 inches and < 129 inches for > 7 days per occurrence or > 14 days per 365 days. OR One shutdown CEA withdrawn < 121.5 inches. OR Two or more shutdown CEAs not within limit.	B.1 Restore shutdown CEA(s) to within limit.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each shutdown CEA is withdrawn ≥ 129 inches.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify each regulating CEA group position is within its insertion limits.	In accordance with the Surveillance Frequency Control Program
SR 3.1.6.2	Verify the accumulated times during which the regulating CEA groups are inserted beyond the steady state insertion limits, but within the transient insertion limits.	In accordance with the Surveillance Frequency Control Program
SR 3.1.6.3	Verify power dependent insertion limit alarm circuit is OPERABLE.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (Continued) All CEAs inserted and the reactor subcritical by less than the above shutdown reactivity equivalent.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify that the position of each CEA not fully inserted is within the acceptance criteria for available negative reactivity addition.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.2	----------NOTE---------- Not required to be performed during initial power escalation following a refueling outage if SR 3.1.4.6 has been met. ---------- Verify that each CEA not fully inserted is capable of full insertion when tripped from at least the 50% withdrawn position.	Once within 7 days prior to reducing SDM to less than the limits of LCO 3.1.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Suspend PHYSICS TESTS. AND B.2 Be in MODE 3.	1 hour 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify THERMAL POWER is equal to or less than the test power plateau.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Either the Excore Detector Monitoring System or the Incore Detector Monitoring System shall be used to determine LHR.

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Deleted	
SR 3.2.1.2	----------NOTE---------- Only applicable when the Excore Detector Monitoring System is being used to determine LHR. ---------- Verify ASI alarm setpoints are within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.3	---------- NOTES ---------- 1. Only applicable when the Incore Detector Monitoring System is being used to determine LHR. 2. Not required to be performed below 20% RTP. --- Verify incore detector local power density alarms satisfy the requirements of the core power distribution map, which shall be updated at least once per 31 days of accumulated operation in MODE 1.	In accordance with the Surveillance Frequency Control Program
SR 3.2.1.4	---------- NOTES ---------- 1. Only applicable when the Incore Detector Monitoring System is being used to determine LHR. 2. Not required to be performed below 20% RTP. --- Verify incore detector local power density alarm setpoints are less than or equal to the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	----------NOTE---------- F_r^T shall be determined by using the incore detectors to obtain a power distribution map with all full length control element assemblies at or above the long-term steady state insertion limit as specified in the COLR. ----------	
	Verify the value of F_r^T.	Prior to operation > 70% RTP after each fuel loading AND In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	Verify T_q is within limits.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.5 AXIAL SHAPE INDEX (ASI)

LCO 3.2.5 The ASI shall be maintained within the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ASI not within limits.	A.1 Restore ASI to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 20% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.5.1	Verify ASI is within limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time not met for Axial Power Distribution-High and Loss of Load Trip Functions.	F.1 Reduce THERMAL POWER to < 15% RTP.	6 hours
G. Required Action and associated Completion Time not met except for Axial Power Distribution-High and Loss of Load Trip Functions.	G.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.1-1 to determine which Surveillance Requirement shall be performed for each RPS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform a CHANNEL CHECK of each RPS instrument channel except Loss of Load.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2	---------- NOTES ---------- 1. Not required to be performed until 12 hours after THERMAL POWER is ≥ 15% RTP. 2. The daily calibration may be suspended during PHYSICS TESTS, provided the calibration is performed upon reaching each major test power plateau, and prior to proceeding to the next major test power plateau. ---------- Perform a calibration (heat balance only) and adjust the excore power range and ΔT power channels to agree with calorimetric calculation if the absolute difference is ≥ 1.5%.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER is ≥ 20% RTP and required to be performed prior to operation above 90% RTP. ---------- Calibrate the power range excore channels using the incore detectors.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	Perform a CHANNEL FUNCTIONAL TEST of each RPS instrument channel except Loss of Load and Rate of Change of Power-High.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.5	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform a CHANNEL CALIBRATION on excore power range channels.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.6	Perform a CHANNEL FUNCTIONAL TEST of each Rate of Change of Power-High and Loss of Load instrument channel.	Once within 7 days prior to each reactor startup
SR 3.3.1.7	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal feature.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform a CHANNEL CALIBRATION of each instrument channel, including applicable automatic bypass removal functions.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.9	----------NOTE---------- Neutron detectors are excluded from RPS RESPONSE TIME testing. ---------- Verify RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform a CHANNEL CHECK of each Wide Range Logarithmic Neutron Flux Monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2	Perform a CHANNEL FUNCTIONAL TEST on the Rate of Change of Power trip instrument channel. The allowable value shall be $\leq$ 2.6 dpm.	Once within 7 days prior to each reactor startup
SR 3.3.2.3	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal feature.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform a CHANNEL CALIBRATION, including automatic bypass removal features.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two channels of RTCBs or Trip Path Logic affecting the same trip leg inoperable.	D.1 Open the affected RTCBs.	Immediately
E. Required Action and associated Completion Time of Condition A, B, or D not met. OR One or more Functions with two or more Manual Trip, Matrix Logic, Trip Path Logic, or RTCB channels inoperable for reasons other than Condition A or D.	E.1 Be in MODE 3. AND E.2 Open all RTCBs.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform a CHANNEL FUNCTIONAL TEST on each RTCB channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.2	Perform a CHANNEL FUNCTIONAL TEST on each RPS Logic channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.3	Perform a CHANNEL FUNCTIONAL TEST on each RPS Manual Trip channel.	Once within 7 days prior to each reactor startup

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform a CHANNEL CHECK of each ESFAS sensor channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS sensor channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.3	Perform a CHANNEL FUNCTIONAL TEST on each automatic block removal feature.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.4	Perform a CHANNEL CALIBRATION of each ESFAS sensor channel, including automatic block removal feature.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.5	Verify ESF RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.5.1	---------- NOTES ---------- 1. Testing of Actuation Logic shall include verification of the proper relay driver output signal. 2. Relays associated with plant equipment that cannot be operated during plant operation are only required to be tested once per 24 months. ---------- Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Actuation Logic channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2	Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Manual Actuation channel.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG-LOVS instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2	Perform CHANNEL CALIBRATION with setpoint Allowable Values as follows: 1. Transient Degraded Voltage Function ≥ 3630 V and ≤ 3790 V; Time Delay: ≥ 7.6 seconds and ≤ 8.4 seconds; 2. Steady State Degraded Voltage Function ≥ 3820 V and ≤ 3980 V Time Delay: ≥ 97.5 seconds and ≤ 104.5 seconds; and 3. Loss of voltage Function ≥ 2345 V and ≤ 2555 V Time Delay: ≥ 1.8 seconds and ≤ 2.2 seconds at 2450 V.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required Manual Actuation channel or Actuation Logic channel inoperable. OR More than one radiation monitor sensor module or associated measurement channel inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Place and maintain containment purge and exhaust valves in closed position. OR B.2 Enter applicable Conditions and Required Actions for affected valves of LCO 3.9.3, "Containment Penetrations," made inoperable by isolation instrumentation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Perform a CHANNEL CHECK on each containment radiation monitor sensor.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.7.2	----------NOTE---------- Testing of Actuation Logic shall include verification of the proper relay driver output signal. ---------- Perform a CHANNEL FUNCTIONAL TEST on each CRS Actuation Logic channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.3	Perform a CHANNEL FUNCTIONAL TEST on each containment radiation monitor sensor. Verify CRS high radiation setpoint is less than or equal to the Allowable Value of 220 mR/hr.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.4	Perform a CHANNEL CALIBRATION on each containment radiation monitor instrument channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.5	Perform a CHANNEL FUNCTIONAL TEST on each CRS Manual Actuation channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.7.6	Verify CRS response time is within limits.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. CRRS trip circuit or measurement channel inoperable during movement of irradiated fuel assemblies.	C.1 Place one Control Room Emergency Ventilation System train in recirculation mode with post-loss-of-coolant incident filter fan in service. OR C.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform a CHANNEL CHECK on the control room radiation monitor channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2	Perform a CHANNEL FUNCTIONAL TEST on the CRRS radiation monitor trip circuit and measurement channel. Verify CRRS high radiation setpoint is less than or equal to the Allowable Value of 6E4 cpm above normal background.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.3	Perform a CHANNEL CALIBRATION on the CRRS radiation monitor trip circuit and measurement channel.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two CVCS isolation sensor modules or associated measurement channels inoperable.	C.1 Place one sensor module in bypass and place the other sensor module in trip. AND C.2 Restore one sensor module and associated measurement channel to OPERABLE status.	1 hour 48 hours
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform a CHANNEL CHECK of each sensor channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.9.2	---------- NOTES ---------- 1. Testing of Actuation Logic shall include the verification of the proper relay driver output signal. 2. Relays associated with plant equipment that cannot be operated during plant operation are only required to be tested once per 24 months. ---------- Perform a CHANNEL FUNCTIONAL TEST on each CVCS sensor channel with setpoints in accordance with the following Allowable Values: West Penetration Room Pressure-High ≤ 0.5 psig Letdown Heat Exchanger Room Pressure-High ≤ 0.5 psig	In accordance with the Surveillance Frequency Control Program
SR 3.3.9.3	Perform a CHANNEL CALIBRATION on each CVCS sensor channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.9.4	Verify CVCS Isolation Signal response time is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

----------NOTE----------
These Surveillance Requirements apply to each PAM instrumentation Function in Table 3.3.10-1.

	SURVEILLANCE	FREQUENCY
SR 3.3.10.1	Perform CHANNEL CHECK for each required indication channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.10.2	Deleted	
SR 3.3.10.3	----------NOTE---------- Neutron detectors, Core Exit Thermocouples, and Reactor Vessel Level Monitoring System are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION on each indication channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.11.1	Perform CHANNEL CHECK for each required indication channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.11.2	----------NOTE---------- Neutron detectors and Reactor Trip Breaker Indication are excluded from the CHANNEL CALIBRATION. ----------	
	Perform CHANNEL CALIBRATION for each required indication channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.12.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.12.2	Perform CHANNEL FUNCTIONAL TEST.	Once within 7 days prior to each reactor startup
SR 3.3.12.3	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.2	Verify RCS cold leg temperature is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.3	Verify RCS total flow rate is greater than or equal to the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.4	Verify measured RCS total flow rate is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (Continued)	B.2 Be in MODE 5 with RCS pressure < 300 psia.	36 hours
C. ---------NOTE ------- Required Action C.2 shall be completed whenever this Condition is entered. ---------- Requirements of Limiting Condition for Operation not met any time in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limits. AND C.2 Determine RCS is acceptable for continued operation.	Immediately Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	----------NOTE ---------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. ----------	
	Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within limits specified in Figures 3.4.3-1 and 3.4.3-2.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops - MODES 1 and 2

LCO 3.4.4 Two RCS loops shall be OPERABLE and in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of Limiting Condition of Operation not met.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.4.1 Verify each RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable.	A.1 Restore required RCS loop to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	12 hours
C. No RCS loop OPERABLE. OR No RCS loop in operation.	C.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. AND C.2 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Verify secondary side water level in each steam generator > -50 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.3	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RCS or SDC loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2	Verify secondary side water level in required steam generator(s) is > -50 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3	Verify correct breaker alignment and indicated power available to the required loop components that are not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.4	----------NOTE ---------- Not required to be performed until 12 hours after entering MODE 4. ---------- Verify required SDC train locations susceptible to gas accumulation are sufficiently filled with water.	31 days

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.7.1	Verify one SDC loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2	Verify required SG secondary side water level is > -50 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.3	Verify correct breaker alignment and indicated power available to the required SDC loop components that are not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.4	Verify required SDC train locations susceptible to gas accumulation are sufficiently filled with water.	31 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required SDC loops inoperable. OR No SDC loop in operation.	B.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. AND B.2 Initiate action to restore one SDC loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one SDC loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify correct breaker alignment and indicated power available to the required SDC loop components that are not in operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.8.3	Verify SDC train locations susceptible to gas accumulation are sufficiently filled with water.	31 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. -------- NOTE -------- Not applicable when second bank of pressurizer heaters intentionally made inoperable. ---------- Two required banks of pressurizer heaters inoperable.	C.1 Restore at least one bank of required pressurizer heaters to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Be in MODE 3. AND D.2 Be in Mode 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is $\geq$ 133 inches and $\leq$ 225 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify capacity of each required bank of pressurizer heaters $\geq$ 150 kW.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two block valves inoperable.	E.1 Place associated PORVs in override closed. AND E.2 Restore one block valve to OPERABLE status.	1 hour 72 hours
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3. AND F.2 Reduce any RCS cold leg temperature ≤ 365°F (Unit 1), ≤ 301°F (Unit 2).	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	Perform a CHANNEL FUNCTIONAL TEST of each PORV.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.2	----------NOTE---------- Not required to be performed with block valve closed in accordance with the Required Actions of this Limiting Condition for Operation. ---------- Perform a complete cycle of each block valve.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.3	Perform a complete cycle of each PORV.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.4	Perform a CHANNEL CALIBRATION of each PORV.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of one HPSI pump is only capable of manually injecting into the RCS.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.2	Verify HPSI loop MOVs are only capable of manually aligning HPSI pump flow to the RCS.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.3	Verify required RCS vent is open.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.4	Verify PORV block valve is open for each required PORV.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.5	----------NOTE---------- Not required to be performed until 12 hours after decreasing any RCS cold leg temperature to ≤ 365°F (Unit 1), ≤ 301°F (Unit 2). ---------- Perform CHANNEL FUNCTIONAL TEST on each required PORV, excluding actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.6	Perform CHANNEL CALIBRATION on each required PORV actuation channel.	In accordance with the Surveillance Frequency Control Program

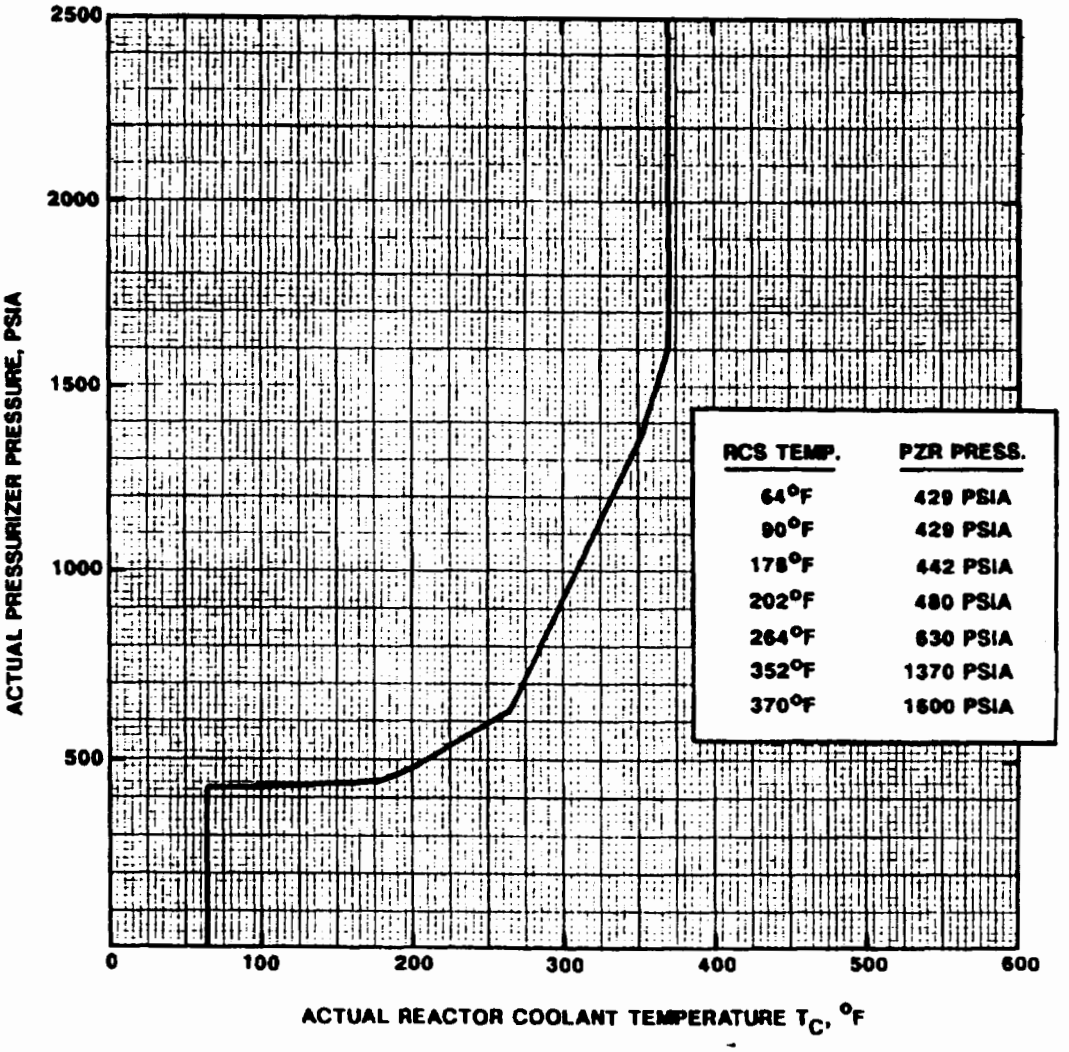

Figure 3.4-12-1
Calvert Cliffs Unit 1, for Fluence $\leq 4.49 \times 10^{19}$ n/cm^2
Maximum PORV Opening Pressure vs Temperature

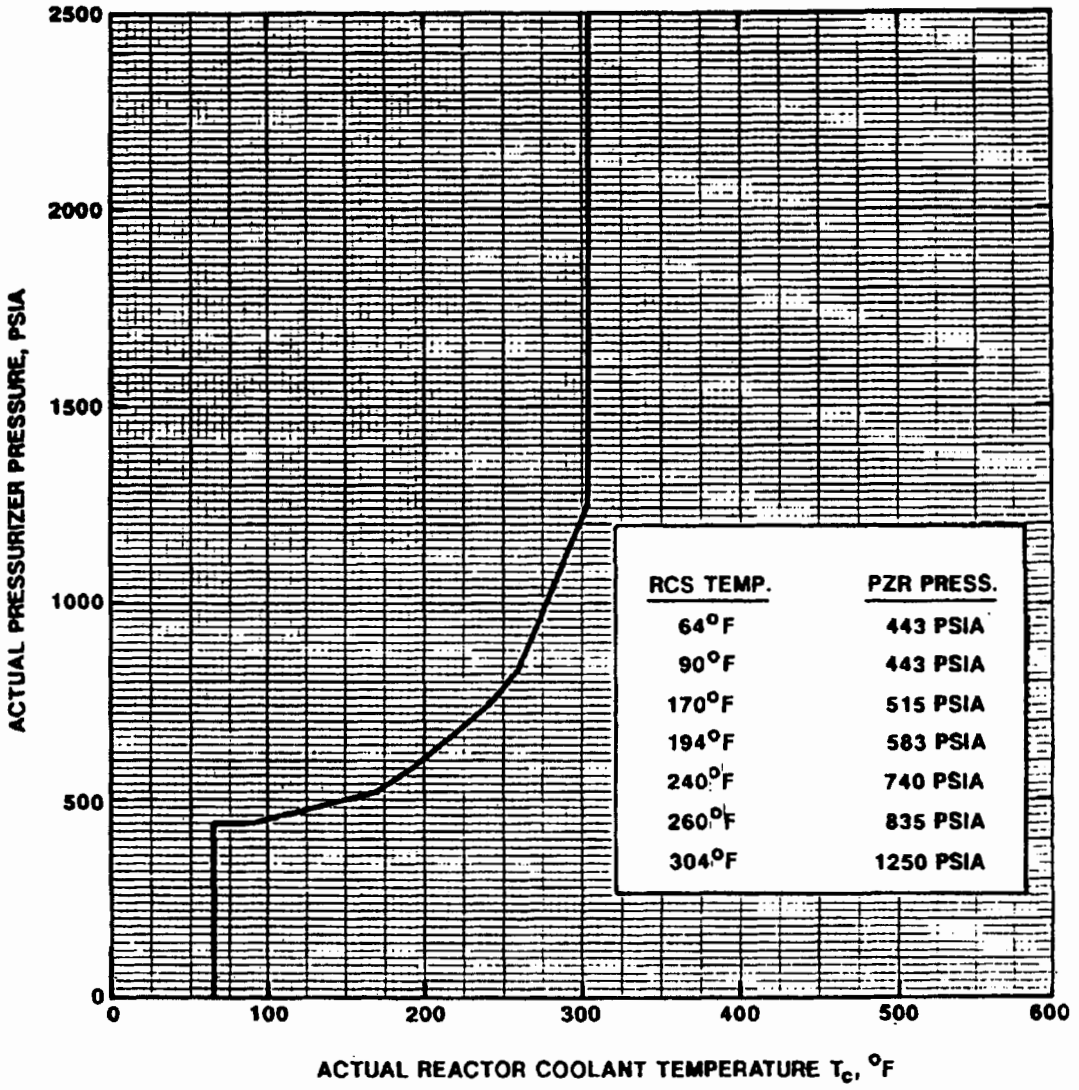

Figure 3.4-12-1
Calvert Cliffs Unit 2, for Fluence $\leq 4.0 \times 10^{19}$ n/cm^2
Maximum PORV Opening Pressure vs Temperature

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.13.1 ---------- NOTES ---------- 1. Not required to be performed until 12 hours after establishment of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. ---------- Verify RCS Operational LEAKAGE is within limits by performance of RCS water inventory balance.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.13.2	----------NOTE---------- Not required to be performed until 12 hours after establishment of steady state operation. ---------- Verify primary to secondary LEAKAGE is ≤ 100 gallons per day through any one SG.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours
E. All required alarms and monitors inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.14.2	Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.14.3	Perform CHANNEL CALIBRATION of the required containment sump level alarm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.14.4	Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR DOSE EQUIVALENT I-131 in the unacceptable region of Figure 3.4.15-1.	B.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours
C. Gross activity of the reactor coolant not within limit.	C.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Verify reactor coolant gross activity ≤ $100/\bar{E}$ μCi/gm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.15.2	----------NOTE---------- Only required to be performed in MODE 1. ----------	
	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq$ 0.5 μCi/gm.	In accordance with the Surveillance Frequency Control Program AND Between 2 and 6 hours after THERMAL POWER change of $\geq$ 15% RTP within a 1 hour period
SR 3.4.15.3	----------NOTE---------- Not required to be performed until 31 days after a minimum of 2 effective full power days and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for $\geq$ 48 hours. ----------	
	Determine $\bar{E}$ from a sample taken in MODE 1 after a minimum of 2 effective full power days and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for $\geq$ 48 hours.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 Special Test Exception (STE) RCS Loops - MODE 2

LCO 3.4.16 The requirements of LCO 3.4.4, "RCS Loops-MODES 1 and 2," and the listed requirements of LCO 3.3.1, "Reactor Protective System (RPS) Instrumentation-Operating," for the Reactor Coolant Flow-Low, Thermal Margin/Low Pressure, and Asymmetric Steam Generator Transient Functions may be suspended provided:

a. THERMAL POWER ≤ 5% RTP; and

b. The reactor trip setpoints of the OPERABLE Power Level-High channels are set ≤ 15% RTP.

APPLICABILITY: MODE 2, during startup and PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER not within limit.	A.1 Open reactor trip breakers.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify THERMAL POWER ≤ 5% RTP.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more requirements of the Limiting Condition for Operation not met.	A.1 Suspend activities being performed under this Special Test Exception.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.17.1	Verify xenon reactivity is within limits.	Once within 1 hour prior to suspending the reactor coolant circulation requirements of LCO 3.4.6, LCO 3.4.7, and LCO 3.4.8
SR 3.4.17.2	Verify charging pumps de-energized.	In accordance with the Surveillance Frequency Control Program
SR 3.4.17.3	Verify charging flow paths isolated.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.4.17.4 Perform SR 3.1.1.1.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each SIT isolation valve is fully open.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	Verify borated water volume in each SIT is ≥ 1113 cubic feet (187 inches) and ≤ 1179 cubic feet (199 inches).	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify nitrogen cover pressure in each SIT is ≥ 200 psig and ≤ 250 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.4	Verify boron concentration in each SIT is ≥ 2300 ppm and ≤ 2700 ppm.	In accordance with the Surveillance Frequency Control Program AND -----NOTE ---- Only required to be performed for affected SIT ---------- Once within 1 hour prior to each solution volume increase of ≥ 1% of tank volume
SR 3.5.1.5	Verify power is removed from each SIT isolation valve operator when pressurizer pressure is ≥ 2000 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify the following valves are in the listed position with power to the valve operator removed. Valve Number / Position / Function MOV-659 / Open / Mini-flow Isolation MOV-660 / Open / Mini-flow Isolation CV-306 / Open / Low Pressure Safety Injection Flow Control	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each ECCS 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.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	Verify each high pressure safety injection and low pressure safety injection pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.4	Deleted	

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	Verify each ECCS automatic valve that is not locked, sealed, or otherwise secured in position, in the flow path actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify each low pressure safety injection pump stops on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet strainers show no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.9	Verify the Shutdown Cooling System open-permissive interlock prevents the Shutdown Cooling System suction isolation valves from being opened with a simulated or actual Reactor Coolant System pressure signal of $\geq$ 309 psia.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.10	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	31 days

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.4.1	----------NOTE ---------- Only required to be performed when ambient air temperature is < 40°F. ---------- Verify RWT borated water temperature is ≥ 40°F.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.2	---------- NOTES ---------- 1. Only required to be met in MODE 1. 2. Only required to be performed when ambient air temperature is > 100°F. ---------- Verify RWT borated water temperature is ≤ 100°F.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.3	Verify RWT borated water volume is ≥ 400,000 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.4	Verify RWT boron concentration is ≥ 2300 ppm and ≤ 2700 ppm.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS)

3.5.5 Sodium Tetraborate (STB)

LCO 3.5.5 The STB baskets shall contain ≥ 13,750 lbm of STB.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. STB not within limits.	A.1 Restore STB to within limits.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.5.1	Verify the STB baskets contain ≥ 13,750 lbm of equivalent weight sodium tetraborate decahydrate.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.5.2	Verify that a sample from the STB baskets provides adequate pH adjustment of water borated to be representative of a post-loss-of-coolant accident sump condition.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	---------- NOTES ---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. ---------- Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each 4 inch containment vent valve is closed except when the 4 inch containment vent valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.2	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ----------	
	Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.4	Verify the isolation time of each automatic power-operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be $\geq$ -1.0 psig and $\leq$ 1.0 psig.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1	Verify containment pressure is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be ≤ 120°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.1	Verify containment average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.6.1	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each containment spray 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.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.3	Verify each containment cooling train cooling water flow rate is ≥ 2000 gpm to each fan cooler.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.7	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	Following maintenance that could result in nozzle blockage
SR 3.6.6.9	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Operate each IRS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.8.2	Perform required IRS filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.6.8.3	Verify each IRS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each AFW manual, power-operated, and automatic valve in each water flow path and in both steam supply flow paths to the steam turbine-driven pumps, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2	Cycle each testable, remote-operated valve that is not in its operating position.	In accordance with the Inservice Testing Program
SR 3.7.3.3	----------NOTE---------- Not required to be performed for the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. ---------- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.7.3.4	----------NOTE---------- Not required to be performed for the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. ---------- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.3.5	----------NOTE---------- Not required to be performed for the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. ---------- Verify each AFW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.6	----------NOTE---------- Not required to be performed for the AFW train with the turbine-driven AFW pump until 24 hours after reaching 800 psig in the steam generators. ---------- Verify the AFW system is capable of providing a minimum of 300 gpm nominal flow to each flow leg.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.7	Verify the proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5 or 6 for > 30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify CST usable volume is ≥ 150,000 gallons per Unit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	----------NOTE---------- Isolation of CC flow to individual components does not render the CC System inoperable. ---------- Verify each CC manual, power-operated, and automatic valve in the flow path servicing safety-related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.5.2	Verify each CC automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.5.3	Verify each CC pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One SRW subsystem inoperable.	B.1 --------NOTE ------- Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources--Operating," for diesel generator made inoperable by SRW. ---------- Restore SRW subsystem to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	----------NOTE---------- Isolation of SRW flow to individual components does not render SRW inoperable. ----------	
	Verify each SRW manual, power-operated, and automatic valve in the flow path servicing safety-related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.6.2	Verify each SRW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.3	Verify each SRW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	----------NOTE---------- Isolation of SW System flow to individual components does not render SW inoperable. ---------- Verify each SW System manual, power-operated, and automatic valve in the flow path servicing safety-related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	Verify each SW System automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.3	Verify each SW System pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Operate each required CREVS filter train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.8.3	Verify each CREVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify each required CRETS train has the capability to maintain control room temperature within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify an OPERABLE SFPEVS train is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.7.11.2	Deleted.	
SR 3.7.11.3	Verify each SFPEVS fan can maintain a measurable negative pressure with respect to adjacent areas.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each PREVS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.12.2	Verify required PREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.3	Verify each PREVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.13 Spent Fuel Pool (SFP) Water Level

LCO 3.7.13 The SFP water level shall be ≥ 21.5 ft over the top of irradiated fuel assemblies seated in the storage racks, and ≥ 19.8 ft over the top of fuel assemblies seated on rack spacers in the storage racks for reconstitution activities.

APPLICABILITY: During movement of irradiated fuel assemblies in the SFP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SFP water level not within limits.	A.1 --------NOTE ------- LCO 3.0.3 is not applicable. ---------- Suspend movement of irradiated fuel assemblies in SFP and suspend reconstitution activities.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify the SFP water level is ≥ 21.5 ft above the top of irradiated fuel assemblies seated in the storage racks.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.14 Secondary Specific Activity

LCO 3.7.14 The specific activity of the secondary coolant shall be ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3.	6 hours
	AND	
	A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify the specific activity of the secondary coolant is within limit.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.16 Spent Fuel Pool (SFP) Boron Concentration

LCO 3.7.16 Boron concentration of the SFP shall be ≥ 2000 ppm.

APPLICABILITY: When fuel assemblies are stored in the SFPs.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent Fuel Pool boron concentration not within limit.	---------- NOTE ---------- LCO 3.0.3 is not applicable. ----------	
	A.1 Suspend movement of fuel assemblies in the SFPs.	Immediately
	AND	
	A.2 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify boron concentration is greater than 2000 ppm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify one complete cycle of each ADV.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. Three or more required LCO 3.8.1.a and LCO 3.8.1.b AC sources inoperable.	K.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
SR 3.8.1.1 through SR 3.8.1.15 are only applicable to LCO 3.8.1.a and LCO 3.8.1.b AC sources. SR 3.8.1.16 is only applicable to LCO 3.8.1.c AC sources.

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	----------NOTE---------- Only required to be performed when SMECO is being credited for an offsite source. --- Verify correct breaker alignment and indicated power availability for the 69 kV SMECO offsite circuit.	Once within 1 hour after substitution for a 500 kV offsite circuit AND In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.2	Verify correct breaker alignment and indicated power availability for each required 500 kV offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.3	---------- NOTES ---------- 1. Performance of SR 3.8.1.9 satisfies this Surveillance Requirement. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this Surveillance Requirement as recommended by the manufacturer. When modified start procedures are not used, the voltage and frequency tolerances of SR 3.8.1.9 must be met. ---------- Verify each DG starts and achieves steady state voltage $\geq$ 4060 V and $\leq$ 4400 V, and frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	---------- NOTES ---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients below the load limit do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This Surveillance Requirement shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.3 or SR 3.8.1.9. ---------- Verify each DG is synchronized and loaded, and operates for ≥ 60 minutes at a load ≥ 4000 kW for DG 1A and ≥ 2700 kW for DGs 1B, 2A, and 2B.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Verify each day tank contains ≥ a one hour supply.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.7	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank[s] to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8	Verify interval between each sequenced load block is within $\pm$ 10% of design interval for each emergency and shutdown load sequencer.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts from standby condition and achieves, in $\leq$ 10 seconds, voltage > 4060 V and frequency > 58.8 Hz, and after steady state conditions are reached, maintains voltage $\geq$ 4060 V and $\leq$ 4400 V and frequency of > 58.8 Hz and $\leq$ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.10	Verify manual transfer of AC power sources from the normal offsite circuit to the alternate offsite circuit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTE---------- 1. Momentary transients outside the load and power factor limits do not invalidate this test. 2. If performed with the DG synchronized with offsite power, the surveillance test shall be performed at the required power factor. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition, the power factor shall be maintained as close to the limit as practicable. ---------- Verify each DG, operating at a frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz, and an appropriate accident load power factor operates for $\geq$ 4 hours while loaded to $\geq$ 4000 kW for DG 1A and $\geq$ 3000 kW for DGs 1B, 2A, and 2B.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.12	Verify each DG rejects a load $\geq$ 500 hp without tripping.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.13	Verify that automatically bypassed DG trips are automatically bypassed on an actual or simulated required actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.14	Verify each DG: a. Synchronizes with offsite power source while loaded upon a simulated restoration of offsite power; b. Manually transfers loads to offsite power source; and c. Returns to ready-to-load operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated Engineered Safety Feature actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. maintains steady state voltage ≥ 4060 V and ≤ 4400 V, 4. maintains steady state frequency of ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	For the LCO 3.8.1.c AC electrical sources, SR 3.8.1.1, SR 3.8.1.2, SR 3.8.1.3, SR 3.8.1.5, SR 3.8.1.6, and SR 3.8.1.7 are required to be performed.	In accordance with applicable Surveillance Requirements
SR 3.8.1.17	----------NOTE---------- Momentary transients outside the load and power factor limits do not invalidate this test. ---------- Verify each DG operates for ≥ 24 hours: a. For ≥ 2 hours of the test loaded to ≥ 4200 kW for DG 1A, and ≥ 3150 kW and ≤ 3300 kW for DGs 1B, 2A, and 2B, and b. For the remaining hours of the test loaded to ≥ 3600 kW for DG 1A, and ≥ 2700 kW and ≤ 3000 kW for DGs 1B, 2A, and 2B.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more DGs with new fuel oil properties not within limits.	E.1 Restore stored fuel oil properties to within limits.	30 days
F. Required Action and associated Completion Time not met. OR One or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated DG(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify fuel oil volume of: a. FOST 1A ≥ a 7 day supply, and b. FOST 21 ≥ a 7 day supply.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.3	Check for and remove accumulated water from each FOST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 125 V on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that degrades performance.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.4	Remove visible terminal corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.5	Verify battery connection resistance is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.6	Verify each battery charger supplies ≥ 400 amps at ≥ 125 V for ≥ 30 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.7	----------NOTE---------- The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in 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.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program AND 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR One or more batteries with average electrolyte temperature of the representative cells < 69°F. OR One or more batteries with one or more battery cell parameters not within Category C limits.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is $\geq$ 69°F.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage and alignment to required AC vital buses.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately
	A.2.3 Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage and alignment to required AC vital buses.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to AC, DC, and AC vital bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately
	A.2.3	Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status. AND	Immediately
	A.2.4	Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System and the refueling pool shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend positive reactivity additions.	Immediately
	AND	
	A.2 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.9.2.2	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program
SR 3.9.3.2	Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (Continued)	A.5	Close one door in each air lock.	4 hours
	AND		
	A.6.1	Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent.	4 hours
		OR	
	A.6.2	Verify each penetration is capable of being closed by an OPERABLE Containment Purge Valve Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one SDC loop is in operation and circulating reactor coolant at a flow rate of $\geq$ 1500 gpm.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (Continued)	B.5.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge Valve Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify required SDC loops are OPERABLE and one SDC loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.2	Verify SDC loop in operation is circulating reactor coolant at a flow rate of ≥ 1500 gpm.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.3	Verify correct breaker alignment and indicated power available to the required SDC loop components that are not in operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.5.4	Verify SDC loop locations susceptible to gas accumulation are sufficiently filled with water.	31 days

3.9 REFUELING OPERATIONS

3.9.6 Refueling Pool Water Level

LCO 3.9.6 Refueling pool water level shall be maintained ≥ 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling pool water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify refueling pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the reactor vessel.	In accordance with the Surveillance Frequency Control Program

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO ADOPTION OF TSTF-425 RELOCATE SPECIFIC SURVEILLANCE FREQUENCIES TO A LICENSEE CONTROLLED PROGRAM

AMENDMENT NO. 314 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 292 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

EXELON GENERATION COMPANY, LLC

DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By application dated May 1, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14125A015), as supplemented by letters dated May 1, 2015 (ADAMS Accession No. ML15126A041), and July 30, 2015 (ADAMS Accession No. ML15212A902), Exelon Generation Company, LLC (Exelon, the licensee), submitted a request for changes to the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (CCNPP, Calvert Cliffs), Technical Specifications (TSs). The supplemental letters dated May 1, 2015, and July 30, 2015, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on July 22, 2014 (79 FR 42549).

The licensee requested to revise the CCNPP TSs by relocating specific surveillance requirement (SR) frequencies to a licensee-controlled program. The licensee requested to revise the TSs to require that changes to such surveillance frequencies will be made in accordance with Nuclear Energy Institute (NEI) 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies" (ADAMS Accession No. ML071360456). The requested change is the adoption of NRC-approved Technical Specification Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF [Risk-Informed TSTF] Initiative 5b" (ADAMS Accession No. ML090850642). The FR notice published on July 6, 2009 (74 FR 31996), announced the availability of TSTF-425, Revision 3.

2.0 REGULATORY EVALUATION

2.1 Description of the Proposed Changes

The licensee proposed to modify the CCNPP TSs by relocating specific surveillance frequencies to a licensee-controlled program (i.e., the Surveillance Frequency Control Program (SFCP)) in accordance with NEI 04-10, Revision 1. The licensee stated that the proposed change is consistent with the adoption of NRC-approved TSTF-425, Revision 3. When implemented, TSTF-425, Revision 3, relocates most periodic frequencies of TS surveillances to the SFCP, and provides requirements for the new SFCP in the Administrative Controls sections of the TSs. All surveillance frequencies can be relocated except the following:

- Frequencies that reference other approved programs for the specific interval (such as the In-Service Testing Program or the Primary Containment Leakage Rate Testing Program);
- Frequencies that are purely event-driven (e.g., "each time the control rod is withdrawn to the 'full out' position");
- Frequencies that are event-driven, but have a time component for performing the surveillance on a one-time basis once the event occurs (e.g., "within 24 hours after thermal power reaching ≥ 95% RTP [rated thermal power]"); and
- Frequencies that are related to specific conditions (e.g., battery degradation, age and capacity) or conditions for the performance of a surveillance requirement (e.g., "drywell to suppression chamber differential pressure decrease").

The licensee proposed to add the SFCP to TSs, Section 5.0, "Administrative Controls," Subsection 5.5, "Programs and Manuals." The SFCP describes the requirements for the program to control changes to the relocated surveillance frequencies. The TS Bases for each affected surveillance would be revised to state that the frequency is controlled under the SFCP. The existing TS Bases information will be relocated to the licensee-controlled SFCP. The proposed changes to the Administrative Controls section of the TSs to incorporate the SFCP include a specific reference to NEI 04-10, Revision 1, as the basis for making any changes to the surveillance frequencies once they are relocated out of the TSs.

By letter dated September 19, 2007 (ADAMS Accession No. ML072570267), the NRC staff approved Topical Report NEI 04-10, Revision 1, as acceptable for referencing in licensing actions, to the extent specified and under the limitations delineated in NEI 04-10, Revision 1, and in the NRC staff's safety evaluation (SE) of NEI 04-10, Revision 1.

The licensee proposed other changes and deviations from TSTF-425, Revision 3, which are discussed in Section 3.3 of this SE.

2.2 Applicable Commission Policy Statements

In the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39135), the NRC addressed the use of Probabilistic Safety Analysis (PSA, currently referred to as Probabilistic Risk Assessment or PRA) in STS. In this publication, the Commission stated:

> The Commission believes that it would be inappropriate at this time to allow requirements which meet one or more of the first three criteria [of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36] to be deleted from Technical Specifications based solely on PSA (Criterion 4). However, if the results of PSA indicate that Technical Specifications can be relaxed or removed, a deterministic review will be performed....
>
> The Commission Policy in this regard is consistent with its Policy Statement on "Safety Goals for the Operation of Nuclear Power Plants," 51 FR 30028, published on August 21, 1986. The Policy Statement on Safety Goals states in part, "* * * probabilistic results should also be reasonably balanced and supported through use of deterministic arguments. In this way, judgments can be made * * * about the degree of confidence to be given these (probabilistic) estimates and assumptions. This is a key part of the process of determining the degree of regulatory conservatism that may be warranted for particular decisions. This defense-in-depth approach is expected to continue to ensure the protection of public health and safety."...
>
> The Commission will continue to use PSA, consistent with its policy on Safety Goals, as a tool in evaluating specific line-item improvements to Technical Specifications, new requirements, and industry proposals for risk-based Technical Specification changes.

Approximately two years later, the NRC provided additional detail concerning the use of PRA in the "Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement," dated August 16, 1995 (60 FR 42622). In this publication, the Commission stated:

> The Commission believes that an overall policy on the use of PRA methods in nuclear regulatory activities should be established so that the many potential applications of PRA can be implemented in a consistent and predictable manner that would promote regulatory stability and efficiency...
>
> PRA addresses a broad spectrum of initiating events by assessing the event frequency. Mitigating system reliability is then assessed, including the potential for multiple and common cause failures. The treatment therefore goes beyond the single failure requirements in the deterministic approach. The probabilistic approach to regulation is, therefore, considered an extension and enhancement of traditional regulation by considering risk in a more coherent and complete manner.

Therefore, the Commission stated:

> The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach...
>
> Therefore, the Commission believes that an overall policy on the use of PRA in nuclear regulatory activities should be established so that the many potential applications of PRA can be implemented in a consistent and predictable manner that promotes regulatory stability and efficiency. This policy statement sets forth the Commission's intention to encourage the use of PRA and to expand the scope of PRA applications in all nuclear regulatory matters to the extent supported by the state-of-the-art in terms of methods and data....
>
> Therefore, the Commission adopts the following policy statement regarding the expanded NRC use of PRA:
>
> (1) The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy.
>
> (2) PRA and associated analyses (e.g., sensitivity studies, uncertainty analyses, and importance measures) should be used in regulatory matters, where practical within the bounds of the state-of-the-art, to reduce unnecessary conservatism associated with current regulatory requirements, regulatory guides, license commitments, and staff practices. Where appropriate, PRA should be used to support the proposal for additional regulatory requirements in accordance with 10 CFR 50.109 (Backfit Rule). Appropriate procedures for including PRA in the process for changing regulatory requirements should be developed and followed. It is, of course, understood that the intent of this policy is that existing rules and regulations shall be complied with unless these rules and regulations are revised.
>
> (3) PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review.
>
> (4) The Commission's safety goals for nuclear power plants and subsidiary numerical objectives are to be used with appropriate consideration of uncertainties in making regulatory judgments on the need for proposing and backfitting new generic requirements on nuclear power plant licensees.

2.3 Applicable Regulations

In 10 CFR, Section 50.36, the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) *Safety limits, limiting safety system*

settings, and limiting control settings; (2) *Limiting conditions for operation*; (3) *Surveillance requirements*; (4) *Design features*; and (5) *Administrative controls.*

Surveillance requirements are defined at 10 CFR 50.36(c)(3) as:

> ...requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The FR notice published on July 6, 2009 (74 FR 31996), announced the availability of TSTF-425, Revision 3. It stated that the addition of the SFCP to the TSs provides the necessary administrative controls to require that surveillance frequencies relocated to the SFCP are conducted at a frequency to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The FR notice also stated that changes to surveillance frequencies in the SFCP are made using the methodology contained in NEI 04-10, Revision 1, including qualitative considerations, results of risk analyses, sensitivity studies and any bounding analyses, and recommended monitoring of structures, systems, and components (SSCs). These changes are also required to be documented.

Existing regulatory requirements, such as 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants" (i.e., the Maintenance Rule), and 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," require licensee monitoring of surveillance test failures and implementing corrective actions to address such failures. Such failures can result in the licensee increasing the frequency of a surveillance test. In addition, by having the TSs require that changes to the frequencies listed in the SFCP be made in accordance with NEI 04-10, Revision 1, the licensee will be required to monitor the performance of SSCs for which surveillance frequencies are decreased to assure reduced testing does not adversely impact the SSCs.

2.4 Applicable NRC Regulatory Guides and Review Plans

Regulatory Guide (RG) 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (ADAMS Accession No. ML100910006), describes an acceptable risk-informed approach for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. This RG also provides risk acceptance guidelines for evaluating the results of such evaluations.

In Revision 1 of RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications" (ADAMS Accession No. ML100910008), it describes an acceptable risk-informed approach specifically for assessing proposed TS changes.

In Revision 2 of RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (ADAMS Accession No. ML090410014), it describes an acceptable approach for determining whether the quality of the PRA, in total or the parts that are used to support an application, is sufficient to provide

confidence in the results such that the PRA can be used in regulatory decision making for light-water reactors (LWRs).

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Chapter 19, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance" (ADAMS Accession No. ML071700658). Guidance on evaluating PRA technical adequacy is provided in SRP, Chapter 19, Section 19.1, Revision 3, "Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load" (ADAMS Accession No. ML12193A107). More specific guidance related to risk-informed TS changes is provided in SRP, Chapter 16, Section 16.1, Revision 1, "Risk-Informed Decisionmaking: Technical Specifications" (ADAMS Accession No. ML070380228), which includes changes to surveillance test intervals (STIs) (i.e., surveillance frequencies) as part of risk-informed decision making. Section 19.2 of the SRP references the same criteria as RG 1.177, Revision 1, and RG 1.174, Revision 2, and states that a risk-informed application should be evaluated to ensure that the proposed changes meet the following key principles:

- The proposed change meets the current regulations unless it is explicitly related to a requested exemption...
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes result in an increase in core damage frequency [CDF] or risk, the increases should be small and consistent with the intent of the Commission's Safety Goal Policy Statement...
- The impact of the proposed change should be monitored using performance measurement strategies.

3.0 TECHNICAL EVALUATION

The licensee's adoption of TSTF-425, Revision 3, provides for administrative relocation of applicable surveillance frequencies to the SFCP, and provides for the addition of the SFCP to the Administrative Controls section of the TSs. The changes to the Administrative Controls section of the TSs will also require the application of NEI 04-10, Revision 1, for any changes to surveillance frequencies within the SFCP. The licensee's application to implement the changes described in TSTF-425, Revision 3, included documentation regarding the PRA technical adequacy consistent with RG 1.200, Revision 2. In Revision 1 of NEI 04-10, it states that PRA methods are used with plant performance data and other considerations to identify and justify modifications to the surveillance frequencies of equipment at nuclear power plants. This is consistent with guidance provided in RG 1.174, Revision 2, and RG 1.177, Revision 1, in support of changes to STIs.

3.1 Review Methodology

In Revision 1 of RG 1.177, it identifies five key safety principles required for risk-informed changes to TSs. Each of these principles is addressed by NEI 04-10, Revision 1.

3.1.1 The Proposed Change Meets Current Regulations

Paragraph 50.36(c)(3) of 10 CFR requires that TSs include surveillances which are "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The licensee is required by its TSs to perform surveillance tests, calibrations, or inspections on specific safety-related equipment (e.g., reactivity control, power distribution, electrical, and instrumentation) to verify system operability. The frequencies for these surveillances are based primarily upon deterministic methods such as engineering judgment, operating experience, and manufacturer's recommendations. The licensee's use of NRC-approved methodologies identified in NEI 04-10, Revision 1, provides a way to establish risk-informed surveillance frequencies that complements the deterministic approach and supports the NRC's traditional defense-in-depth philosophy.

Despite the requested change, the SRs themselves will remain in the TSs, as required by 10 CFR 50.36(c)(3). This change is analogous to other NRC-approved TS changes in which the SRs are retained in TSs, but the related surveillance frequencies are relocated to licensee-controlled documents such as surveillances performed in accordance with the In-Service Testing Program and the Primary Containment Leakage Rate Testing Program. Thus, the proposed change complies with 10 CFR 50.36(c)(3) by retaining in TSs the requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The regulatory requirements in 10 CFR 50.65, 10 CFR Part 50, Appendix B, and the monitoring required by NEI 04-10, Revision 1, ensure that the surveillance frequencies are sufficient to assure that the requirements of 10 CFR 50.36 are satisfied; and that any performance deficiencies will be identified and appropriate corrective actions taken. The licensee's SFCP ensures that SRs specified in the TSs are performed at intervals sufficient to assure the above regulatory requirements are met. Based on the above, the NRC staff concludes that the proposed change meets the first key safety principle of RG 1.177, Revision 1, by complying with current regulations.

3.1.2 The Proposed Change Is Consistent With the Defense-in-Depth Philosophy

The defense-in-depth philosophy (i.e., the second key safety principle of RG 1.177, Revision 1), is maintained if:

- A reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation.

- Over-reliance on programmatic activities to compensate for weaknesses in plant design is avoided.

- System redundancy, independence, and diversity are preserved commensurate with the expected frequency, consequences of challenges to the system, and uncertainties (e.g., no risk outliers). (Because the scope of the proposed change is limited to revision of surveillance frequencies, the redundancy, independence, and diversity of plant systems are not impacted.)

- Defenses against potential common cause failures are preserved, and the potential for the introduction of new common cause failure mechanisms is assessed.

- Independence of physical barriers is not degraded.

- Defenses against human errors are preserved.

- The intent of the General Design Criteria in 10 CFR Part 50, Appendix A, is maintained.

The changes to the Administrative Controls section of the TSs will require the application of NEI 04-10, Revision 1, for any changes to surveillance frequencies within the SFCP. In Revision 1 of NEI 04-10, it uses both the CDF and the large early release frequency (LERF) metrics to evaluate the impact of proposed changes to surveillance frequencies. The guidance of RG 1.174, Revision 2, and RG 1.177, Revision 1, for changes to CDF and LERF is achieved by evaluation using a comprehensive risk analysis, which assesses the impact of proposed changes including contributions from human errors and common cause failures (CCFs). Defense-in-depth is also included in the methodology explicitly as a qualitative consideration outside of the risk analysis, as is the potential impact on detection of component degradation that could lead to an increased likelihood of CCFs. Therefore, the NRC staff concludes that both the quantitative risk analysis and the qualitative considerations assure that a reasonable balance of defense-in-depth is maintained to ensure protection of the public health and safety, thus satisfying the second key safety principle of RG 1.177, Revision 1.

3.1.3 The Proposed Change Maintains Sufficient Safety Margins

The engineering evaluation that will be conducted by the licensee under the SFCP when frequencies are revised will assess the impact of the proposed frequency change to assure that sufficient safety margins are maintained. The guidelines used for making that assessment will include ensuring that the proposed surveillance test frequency change is not in conflict with approved industry codes and standards, or adversely affects any assumptions or inputs to the safety analysis; or, if such inputs are affected, justification is provided to ensure sufficient safety margin will continue to exist.

The design, operation, testing methods, and acceptance criteria for SSCs specified in applicable codes and standards (or alternatives approved for use by the NRC) will continue to be met as described in the plants' licensing bases, including the Updated Final Safety Analysis Report and TS Bases, because these are not affected by changes to the surveillance frequencies. Similarly, there is no impact to the safety analysis acceptance criteria as described in the plant licensing basis. Based on the above, the NRC staff concludes that safety margins are

maintained by the proposed change and, thus, that the third key safety principle of RG 1.177, Revision 1, is satisfied.

3.1.4 When Proposed Changes Result in an Increase in CDF or Risk, the Increases Should Be Small and Consistent with the Intent of the Commission's Safety Goal Policy Statement

Revision 1 of RG 1.177, provides a framework for evaluating the risk impact of proposed changes to surveillance frequencies which requires identification of the risk contribution from impacted surveillances, determination of the risk impact from the change to the proposed surveillance frequency, and performance of sensitivity and uncertainty evaluations. The changes to the Administrative Controls section of the TSs will require application of NEI 04-10, Revision 1, in the SFCP. Revision 1 of NEI 04-10 satisfies the intent of the RG 1.177, Revision 1, guidance for the evaluation of the change in risk, and for assuring that such changes are small by providing the technical methodology to support risk-informed TSs for control of surveillance frequencies.

3.1.4.1 Quality of the PRA

The quality of the licensee's PRA must be commensurate with the safety significance of the proposed TS change and the role the PRA plays in justifying the change. Specifically, the greater the change in risk or the greater the uncertainty in that risk from the requested TS change (or both), the more rigor that must go into ensuring the quality of the PRA.

In RG 1.200, regulatory guidance is provided for assessing the technical adequacy of a PRA. The current revision (i.e., Revision 2) of this RG endorses, with clarifications and qualifications, the use of: (1) American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) RA-Sa-2009, "Addenda to ASME RA-S-2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications" (i.e., the PRA Standard), (2) NEI 00-02, "PRA Peer Review Process Guidance" (ADAMS Accession Nos. ML061510619 and ML063390593), and (3) NEI 05-04, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard" (ADAMS Accession No. ML083430462).

The licensee has performed an assessment of the PRA models used to support the SFCP using the guidance of RG 1.200, Revision 2, to assure that the PRA models are capable of determining the change in risk due to changes to surveillance frequencies of SSCs, using plant-specific data and models. Capability Category II of the NRC-endorsed PRA standard is the target capability level for supporting requirements for the internal events PRA for this application. Any identified deficiencies to those requirements are assessed further to determine any impacts to proposed decreases to surveillance frequencies, including the use of sensitivity studies, where appropriate, in accordance with NEI 04-10, Revision 1.

The Pressurized Water Reactors Owners Group performed a full scope peer review of the CCNPP internal events PRA in June 2010. The NRC staff notes that the licensee's September 18, 2014, application associated with containment leak rate test extension (ADAMS Accession No. ML14265A219) clarifies that the peer review was performed against the guidance of RG 1.200, Revision 2, and requirements of ASME/ANS RA-Sa-2009. Table A-1 in

Attachment 2 of the licensee's application dated May 1, 2014, explains how all internal events PRA peer review facts and observations (F&Os) findings from this peer review have been dispositioned, as well as their impact on CDF and LERF. In Attachment 2 to the application dated May 1, 2014, the licensee stated:

> The peer review found that 97% of the SR's [Supporting Requirements] evaluated met Capability Category II or better. There were 3 SR's that were noted as "not met" and 8 that were noted as Category 1. As noted in the peer review report the majority of the findings were documentation related. Of the 11 SR's which did not meet Category 2 or better, 7 were related to conservatisms or documentation in LERF and 2 were related to internal floods. There were 39 findings. Most of the findings have been addressed in the PRA model. No significant changes have been implemented in the internal events PRA. As there are no new methods applied, no follow on or focused peer reviews were required.

The NRC staff reviewed: (1) the summary of the peer review finding, (2) the licensee's resolution to the finding, and (3) the licensee's assessment of the impact on this application, for the F&Os listed in Table A-1 of the application dated May 1, 2014, to identify whether any gaps in the PRA model were identified that could impact the application. The NRC staff assessed these peer review F&Os to ensure that any deficiencies in meeting Capability Category II could be addressed for the SFCP per the NEI 04-10, Revision 1, methodology.

The NRC staff notes that the licensee's February 17, 2015, response to the Division of Risk Assessment, PRA Licensing Branch (APLA) Request for Additional Information (RAI) 1 (ADAMS Accession No. ML15051A409), associated with the licensee's containment leak rate test extension request, identified the three "not met" SRs as LE-F2, LE-G5, and IFQU-A10. These correspond to F&Os 4-21, 4-22, and 6-17, respectively. F&Os 4-21 and 4-22 are related to documentation of limitations associated with the LERF analysis and conservative LERF results, respectively. The disposition for F&O 4-22 refers to information associated with F&O 4-19, which pertains to sources of uncertainty and conservatisms in the LERF analysis associated with interfacing-systems loss of coolant accident and steam generator tube rupture modeling. The disposition for F&O 4-19 explains that the dominant LERF contributors were reviewed and model changes were implemented to address significant uncertainties and reduce LERF. These PRA model changes were documented as discussed in the disposition for F&O 4-21. The NRC staff, thus, concludes that the dispositions are acceptable for this application.

The F&O 6-17 for SR IFQU-A10 relates to documentation of the treatment of the internal flood analysis in the event trees and its impact on the LERF analysis. In the disposition for the F&O, the licensee noted that this F&O has been entered into its configuration control database and that it may result in changes to the PRA model for internal floods. However, the licensee also addressed its impact and explained that cutset reviews have not identified modeling deficiencies associated with this item. Since this F&O finding would only potentially impact the risk metrics associated with internal flooding, particularly for LERF, the NRC staff concludes that the disposition is acceptable for this application.

The NRC staff notes that the licensee's February 9, 2015, response (ADAMS Accession No. ML15043A249, not publicly available per 10 CFR 2.390) to NRC's PRA RAI 02, associated

with the licensee's request to adopt National Fire Protection Association (NFPA) Standard 805 (NFPA 805), further addressed the disposition of F&Os 4-5 and 6-23. F&O 4-5 pertains to modeling of the station blackout diesel generator which is shared between Units 1 and 2. The disposition to the F&O in the licensee's May 1, 2014, application stated that no unit preference is modeled. Part (a) of the NFPA 805 RAI response further explained the strategy for alignment of this diesel generator and why the fixed alignment assumption in the PRA is considered to be a conservative assumption. The F&O 6-23 pertains to human reliability analysis (HRA) and appropriate modeling of time delay for different accident sequences. The disposition to the F&O in the licensee's application dated May 1, 2014, stated that an updated dependency analysis has been performed for the new human error probabilities (HEPs) added to address early and late condensate storage tank (CST) depletion scenarios. Part (b) of the NFPA 805 RAI response provided additional information on the disposition of this issue and explained that an additional review was performed that determined only a very small fraction of HEPs were found to have time delays that might not be appropriate and further discussed the dependency analysis for HEPs associated with CST depletion. Given the additional information provided in the response to NFPA 805 PRA RAI 02, the NRC staff concludes that the licensee's dispositions of F&Os 4-5 and 6-23 are acceptable for this application.

Based on the licensee's assessments using the currently applicable PRA standard and revision of RG 1.200, the NRC staff concludes that the level of PRA quality, combined with the evaluation and disposition of gaps, is sufficient to support the evaluation of changes proposed to surveillance frequencies within the SFCP; and is consistent with Regulatory Position 2.3.1 of RG 1.177, Revision 1.

3.1.4.2 Scope of the PRA

The changes to the Administrative Controls section of the TSs will require the licensee to evaluate each proposed change to a relocated surveillance frequency using NEI 04-10, Revision 1, to determine its potential impact on risk (i.e., CDF and LERF) from internal events, fires, seismic, other external events, and shutdown conditions. In cases where a PRA of sufficient scope or quantitative risk models were unavailable, the licensee used bounding analyses, or other conservative quantitative evaluations. A qualitative screening analysis may be used when the surveillance frequency impact on plant risk is shown to be negligible or zero.

The licensee also has an at-power internal events and internal flooding PRA model, as well as an at-power fire PRA, to support the adoption of NFPA 805. In accordance with NEI 04-10, Revision 1, the licensee will use these models to perform quantitative evaluations to support the development of changes to surveillance frequencies in the SFCP. The NRC staff finds that this is acceptable because the NRC-approved methodology in NEI 04-10, Revision 1, allows for more refined analysis to be performed to support changes to surveillance frequencies in the SFCP.

In Attachment 2 to the application dated May 1, 2014, the licensee stated that the CCNPP seismic PRA has not been updated since the Individual Plant Examination of External Events (IPEEE), and, therefore, that the results of the seismic analysis will be qualitatively evaluated for its impact on STI extensions. The licensee also referenced the NRC staff memorandum on Generic Issue 199 (GI-199) "Safety/Risk Assessment Results for Generic Issue 199, 'Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United

States on Existing Plants'" (ADAMS Accession No. ML100270582), that discusses recent updates to estimates of the seismic hazard in the central and eastern United States, and explained that the IPEEE values bound the "weakest link" seismic CDFs in GI-199, Table D-1. The licensee explained that the IPEEE seismic hazard inputs also appear to be conservative as compared to the latest Ground Motion Response Spectra provided by the Electric Power Research Institute in late 2013. This supports the licensee's conclusion that insights from the IPEEE seismic PRA can be used to support the SFCP. The NRC staff finds that this is an acceptable approach in accordance with NEI 04-10, Revision 1.

In Attachment 2 to the application dated May 1, 2014, the licensee stated that CCNPP has maintained and updated a high winds PRA model which has not been peer reviewed. This model was used to estimate the high winds CDF to be 9.4E-07 per year for CCNPP. This indicates that high winds risk may not have a significant impact on the CCNPP SFCP. In accordance with NEI 04-10, Revision 1, the licensee can perform qualitative or quantitative analyses to evaluate the impact of external events on surveillance frequency changes. Therefore, the NRC staff finds that the use of the CCNPP high winds model is acceptable for this application.

In its letter dated May 1, 2015, the licensee responded to RAI 2, and explained that CCNPP does not currently have a low power or shutdown PRA model. However, the licensee explained that the CCNPP SFCP will qualitatively assess shutdown events in accordance with NEI 04-10, Revision 1.

Based on the above, the NRC staff concludes that, through the application of NRC-approved NEI 04-10, Revision 1, the licensee's evaluation methodology is sufficient to ensure that the scope of the risk contribution of each surveillance frequency change is properly identified for evaluation and is consistent with Regulatory Position 2.3.2 of RG 1.177, Revision 1.

3.1.4.3 PRA Modeling

The licensee's methodology includes the determination of whether the SSCs affected by a proposed change to a surveillance frequency are modeled in the PRA. Where the SSC is directly or implicitly modeled, a quantitative evaluation of the risk impact may be carried out. The methodology adjusts the failure probability of the impacted SSCs, including any impacted CCF modes, based on the proposed change to the surveillance frequency. Where the SSC is not modeled in the PRA, bounding analyses are performed to characterize the impact of the proposed change to the surveillance frequency. Potential impacts on the risk analyses due to screening criteria and truncation levels are addressed by the requirements for PRA technical adequacy consistent with guidance contained in RG 1.200, and by sensitivity studies identified in NEI 04-10, Revision 1.

Based on the above, the NRC staff concludes that, through the application of NRC-approved NEI 04-10, Revision 1, the CCNPP PRA modeling is sufficient to ensure an acceptable evaluation of risk for the proposed changes in surveillance frequency; and is consistent with Regulatory Position 2.3.3 of RG 1.177, Revision 1.

3.1.4.4 Assumptions for Time Related Failure Contributions

The failure probabilities of SSCs modeled in PRAs may include a standby time-related contribution and a cyclic demand-related contribution. In its letter dated May 1, 2015, the licensee responded to RAI 1 and explained that the standby time-related contribution evaluation will be performed in accordance with NEI 04-10, Revision 1. The criteria in NEI 04-10, Revision 1, adjust the time-related failure contribution of SSCs affected by the proposed change to a surveillance frequency. This is consistent with RG 1.177, Revision 1, Section 2.3.3, which permits separation of the failure rate contributions into demand and standby for evaluation of SRs. If the available data does not support distinguishing between the time-related failures and demand failures, then the change to surveillance frequency is conservatively assumed to impact the total failure probability of the SSC, including both standby and demand contributions. The SSC failure rate (per unit time) is assumed to be unaffected by the change in test frequency such that the failure probability is assumed to increase linearly with time, and it will be confirmed by the required monitoring and feedback implemented after the change in surveillance frequency is implemented. The NEI 04-10 process requires consideration of qualitative sources of information with regard to potential impacts of test frequency on SSC performance, including industry and plant-specific operating experience, vendor recommendations, industry standards, and code-specified test intervals. Thus, the process is not reliant upon risk analyses as the sole basis for the proposed changes.

The potential benefits of a reduced surveillance frequency, including reduced downtime and reduced potential for restoration errors, test-caused transients, and test-caused wear of equipment, are identified qualitatively but not quantitatively assessed.

Based on the above, the NRC staff concludes that, through the application of NRC-approved NEI 04-10, Revision 1, the licensee has employed reasonable assumptions with regard to extensions of STIs; and is consistent with Regulatory Position 2.3.4 of RG 1.177, Revision 1.

3.1.4.5 Sensitivity and Uncertainty Analyses

By having the TSs require that changes to the frequencies listed in the SFCP be made in accordance with NEI 04-10, Revision 1, the licensee will be required to have sensitivity studies that assess the impact of uncertainties from key assumptions of the PRA, uncertainty in the failure probabilities of the affected SSCs, impact on the frequency of initiating events, and any identified deviations from Capability Category II of the PRA standard. Where the sensitivity analyses identify a potential impact on the proposed change, revised surveillance frequencies are considered along with any qualitative considerations that may impact the results of such sensitivity studies. The licensee will also be required to perform monitoring and feedback of SSC performance once the revised surveillance frequencies are implemented. Based on the above, the NRC staff concludes that, through the application of NRC-approved NEI 04-10, Revision 1, the licensee has appropriately considered the possible impact of PRA model uncertainty and sensitivity to key assumptions and model limitations; and is consistent with Regulatory Position 2.3.5 of RG 1.177, Revision 1.

3.1.4.6 Acceptance Guidelines

The licensee will be required to quantitatively evaluate the change in total risk (including internal and external events contributions) in terms of CDF and LERF for both the individual risk impact of a proposed change in surveillance frequency, and the cumulative impact from all individual changes to surveillance frequencies using NEI 04-10, Revision 1, in accordance with the TS SFCP. Each individual change to a surveillance frequency must show a risk impact below 1E-6 per year for change to CDF and below 1E-7 per year for change to LERF. These changes to CDF and LERF are consistent with the acceptance criteria of RG 1.174, Revision 2, for very small changes in risk. Where the RG 1.174, Revision 2, acceptance criteria are not met, the process in NEI 04-10, Revision 1, either considers revised surveillance frequencies which are consistent with RG 1.174, Revision 2, or the process terminates without permitting the proposed changes. Where quantitative results are unavailable for comparison with the acceptance guidelines, appropriate qualitative analyses are required to demonstrates that the associated risk impact of a proposed change to surveillance frequency is negligible or zero. Otherwise, bounding quantitative analyses are required which demonstrate the risk impact is at least one order of magnitude lower than the RG 1.174, Revision 2, acceptance guidelines for very small changes in risk. In addition to assessing each individual SSC surveillance frequency change, the cumulative impact of all changes must result in a risk impact less than 1E-5 per year for change to CDF and less than 1E-6 per year for change to LERF; and the total CDF and total LERF must be reasonably shown to be less than 1E-4 per year and 1E-5 per year, respectively. These values are consistent with the acceptance criteria of RG 1.174, Revision 2, as referenced by RG 1.177, Revision 1, for changes to surveillance frequencies.

Consistent with the NRC's SE dated September 19, 2007, for NEI 04-10, Revision 1, the TS SFCP will require the licensee to calculate the total change in risk (i.e., the cumulative risk) by comparing a baseline model that uses failure probabilities based on surveillance frequencies, prior to being changed per the SFCP to a revised model that uses failure probabilities based on the changed surveillance frequencies. The NRC staff further notes that the licensee included a provision to exclude the contribution to cumulative risk from individual changes to surveillance frequencies associated with insignificant risk increases (i.e., less than 5E-8 CDF and 5E-9 LERF) once the baseline PRA models are updated to include the effects of the revised surveillance frequencies.

The quantitative acceptance guidance of RG 1.174, Revision 2, is supplemented by qualitative information to evaluate the proposed changes to surveillance frequencies, including industry and plant-specific operating experience, vendor recommendations, industry standards, the results of sensitivity studies, and SSC performance data and test history. The final acceptability of the proposed change is based on all of these considerations and not solely on the PRA results. Post implementation performance monitoring and feedback are also required to assure continued reliability of the components. Based on the above, the NRC staff concludes that the licensee's application of NRC-approved NEI 04-10, Revision 1, provides acceptable methods for evaluating the risk increase associated with proposed changes to surveillance frequencies and is thus consistent with Regulatory Position 2.4 of RG 1.177, Revision 1.

Therefore, the NRC staff concludes that the proposed change satisfies the fourth key safety principle of RG 1.177, Revision 1, by assuring that any increase in risk is small consistent with the intent of the Commission's Safety Goal Policy Statement.

3.1.5 The Impact of the Proposed Change Should Be Monitored Using Performance Measurement Strategies

The licensee's adoption of TSTF-425, Revision 3, requires application of NEI 04-10, Revision 1, in the SFCP. In Revision 1 of NEI 04-10, it requires performance monitoring of SSCs whose surveillance frequencies have been revised as part of a feedback process to assure that the change in test frequency has not resulted in degradation of equipment performance and operational safety. The monitoring and feedback includes consideration of Maintenance Rule monitoring of equipment performance. In the event of SSC performance degradation, the surveillance frequency will be reassessed in accordance with the methodology, in addition to any corrective actions which may be required by the Maintenance Rule. The performance monitoring and feedback specified in NEI 04-10, Revision 1, is sufficient to reasonably assure acceptable SSC performance and is consistent with Regulatory Position 3.2 of RG 1.177, Revision 1. Thus, the NRC staff concludes that the fifth key safety principle of RG 1.177, Revision 1, is satisfied.

3.2 Addition of Surveillance Frequency Control Program to Administrative Controls

The licensee proposed including the SFCP and specific requirements into the CCNPP TSs, Section 5.5.19, as follows:

> Surveillance Frequency Control Program
>
> This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure that the associated Limiting Conditions for Operation are met.
>
> a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
>
> b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk Informed Method for Control of Surveillance Frequencies," Revision 1.
>
> c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

The proposed program is consistent with the model application of TSTF-425 and, therefore, the NRC staff concludes that it is acceptable.

3.3 Deviations from TSTF-425 and Other Changes

3.3.1 Revised Clean TS Pages

In its application dated May 1, 2014, the licensee only provided marked-up TS pages. Only providing mark-ups of the proposed TS changes satisfies the requirements of 10 CFR 50.90 "Application for amendment of license, construction permit, or early site permit," in that the mark-ups fully describe the changes desired. The NRC staff finds that this is an administrative deviation from the NRC staff's model application dated July 6, 2009 (74 FR 31996), with no impact on the NRC staff's model SE published in the same FR notice.

3.3.2 Differences between Calvert Cliffs TSs and NUREG-1432

In its application dated May 1, 2014, the licensee stated that the Calvert Cliffs TS SR numbers, and associated TS Bases numbers, differ from those in NUREG-1432, Revision 4, "Standard Technical Specifications – Combustion Engineering Plants," Volumes 1 and 2, and TSTF-425, Revision 3. There are also surveillances contained in NUREG-1432 that are not contained in the Calvert Cliffs TSs. These surveillances identified in TSTF-425 for NUREG-1432 are not applicable to Calvert Cliffs. These differences are administrative deviations from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). Therefore, the NRC staff finds this acceptable.

In its application dated May 1, 2014, the licensee noted that the Calvert Cliffs TSs include plant-specific SR 3.4.17, that is not contained in NUREG-1432, and, therefore, is not included in the NUREG-1432 SRs provided in TSTF-425. In its application dated May 1, 2014, the licensee requested that this surveillance frequency be relocated to the SFCP. The relocation of the plant-specific surveillance frequencies is consistent with TSTF-425 and with the NRC staff's model SE dated July 6, 2009 (74 FR 31996), including the scope exclusions identified in Section 1.0, "Introduction," of the model SE because the plant-specific surveillance frequencies involved fixed period frequencies. Changes to the frequencies for these plant-specific surveillances would be controlled under the SFCP. Therefore, the NRC staff finds this acceptable.

3.3.3 Technical Specification Bases

In its application dated May 1, 2014, the licensee noted that the TSTF-425 TS Bases insert, "The Surveillance Frequency is based on operating experience, equipment reliability, and plant risk and is controlled under the Surveillance Frequency Control Program," should be revised to state, "The Surveillance Frequency is controlled under the Surveillance Frequency Control Program." The licensee noted that this change is due to an agreement between the TSTF and the NRC Notice of Issuance (ADAMS Accession No. ML100990099) as it was recognized that surveillance frequencies that were relocated, but not changed, under the SFCP may not have been based on operating experience, equipment reliability, or plant risk. This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). Therefore, the NRC staff finds this acceptable.

3.3.4 Technical Specification 5.5.15

In its application dated May 1, 2014, the licensee stated that the TSTF-425 TS Section 5.5.15 insert references NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies." The Calvert Cliffs TS 5.5.19 insert references NEI 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." Both of these inserts reference the same NEI 04-10 document, although Calvert Cliffs referenced the full title of NEI 04-10. This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). Therefore, the NRC staff finds this acceptable.

3.4 Technical Evaluation Summary and Conclusions

The NRC staff has reviewed the licensee's proposed relocation of specific surveillance frequencies to a licensee-controlled document, and controlling changes to these surveillance frequencies in accordance with a new program (the SFCP) identified in the Administrative Controls section of the TSs. The NRC staff confirmed that this amendment does not relocate surveillance frequencies that: reference other approved programs for the specific interval, are purely event-driven, are event-driven but have a time component for performing the surveillance on a one-time basis once the event occurs, or are related to specific conditions. The SFCP and proposed new TSs Section 5.0, Subsection 5.5.19, reference NEI 04-10, Revision 1, which provides a risk-informed methodology using plant-specific risk insights and performance data to revise surveillance frequencies within the SFCP. This methodology supports relocating surveillance frequencies from the TSs to a licensee-controlled document provided that those frequencies are changed in accordance with NEI 04-10, Revision 1, which is specified in the Administrative Controls section of the TSs.

The proposed licensee adoption of TSTF-425, Revision 3, and risk-informed methodology of NRC-approved NEI 04-10, Revision 1, as referenced in the Administrative Controls section of TSs, satisfies the key principles of risk-informed decision making applied to changes to TSs as delineated in RG 1.177 and RG 1.174, in that:

- The proposed change meets current regulations...
- The proposed change is consistent with defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes result in an increase in core damage frequency or risk, the increases should be small and consistent with the intent of the Commission's Safety Goal Policy Statement...
- The impact of the proposed change is monitored with performance measurement strategies.

Paragraph 50.36(c) of 10 CFR discusses the categories that must be included in TSs. Paragraph 50.36(c)(3) of 10 CFR discusses the specific category of SRs and states that,

"Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." Based on the above evaluation, the NRC staff concludes that, with the proposed relocation of surveillance frequencies to a licensee-controlled document that is administratively controlled in accordance with the TS SFCP, the licensee continues to meet the requirements in 10 CFR 50.36.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the FR on July 22, 2014 (79 FR 42549). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

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

7.0 REFERENCES

Letter from George Gellrich to U.S. Nuclear Regulatory Commission, "License Amendment Request: Adoption of Technical Specification Task Force Traveler (TSTF) - 425, Revision 3, Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b," May 1, 2014 (ADAMS Accession No. ML14125A015).

Letter from Mark Flaherty to U.S. Nuclear Regulatory Commission, "Request for Additional Information Regarding TSTF-425 License Amendment Request," May 1, 2015 (ADAMS Accession No. ML15126A041).

Letter from George Gellrich to U.S. Nuclear Regulatory Commission, "Supplemental Information Regarding TSTF-425 License Amendment Request," July 30, 2015 (ADAMS Accession No. ML15212A902)

U.S. Nuclear Regulatory Commission, "Biweekly Notice; Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations," *Federal Register*, Vol. 79, No. 140, July 22, 2014, pp. 42539-42550.

Nuclear Energy Institute, NEI 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies," April 2007 (ADAMS Accession No. ML071360456).

Technical Specifications Task Force, TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b," March 18, 2009 (ADAMS Accession No. ML090850642).

U.S. Nuclear Regulatory Commission, "Notice of Availability of Technical Specification Improvement To Relocate Surveillance Frequencies to Licensee Control – Risk-Informed Technical Specification Task Force (RITSTF) Initiative 5b, Technical Specification Task Force-425, Revision 3," *Federal Register*, Vol. 74, No. 127, July 06, 2009, pp. 31996.

U.S. Nuclear Regulatory Commission, "Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) 04-10, Revision 1, 'Risk-Informed Technical Specification Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies,'" September 19, 2007 (ADAMS Accession No. ML072570267).

U.S. Nuclear Regulatory Commission, "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," *Federal Register*, Vol. 58, No. 139, July 22, 1993, pp. 39132-39135.

U.S. Nuclear Regulatory Commission, "Safety Goals for the Operations of Nuclear Power Plants; Policy Statement; Republication," *Federal Register*, Vol. 51, No. 162, August 21, 1986, pp. 30028-30032.

U.S. Nuclear Regulatory Commission, "Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement," *Federal Register*, Vol. 60, No. 158, August 16, 1995, pp. 42622-42629.

Federal Regulation, U.S. Code of Federal Regulations, "Domestic Licensing of Production and Utilization Facilities – Backfitting," Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 109.

Federal Regulation, U.S. Code of Federal Regulations, "Domestic Licensing of Production and Utilization Facilities – Technical Specifications," Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 36.

Federal Regulation, U.S. Code of Federal Regulations, "Domestic Licensing of Production and Utilization Facilities – Requirements For Monitoring The Effectiveness Of

Maintenance At Nuclear Power Plants," Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 65.

Federal Regulation, U.S. Code of Federal Regulations, "Appendix B to Part 50 – Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B.

U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 2 to Regulatory Guide 1.174, May 2011 (ADAMS Accession No. ML100910006).

U.S. Nuclear Regulatory Commission, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," Revision 1 to Regulatory Guide 1.177, May 2011 (ADAMS Accession No. ML100910008).

U.S. Nuclear Regulatory Commission, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Revision 2 to Regulatory Guide 1.200, March 2009 (ADAMS Accession No. ML090410014).

U.S. Nuclear Regulatory Commission, "Standard Review Plan, Section 19.2, Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," NUREG-0800, June 2007 (ADAMS Accession No. ML071700658).

U.S. Nuclear Regulatory Commission, "Standard Review Plan, Section 19.1, Revision 3, Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load," NUREG-0800, September 2012 (ADAMS Accession No. ML12193A107).

U.S. Nuclear Regulatory Commission, "Standard Review Plan, Section 16.1, Revision 1, Risk-Informed Decision Making: Technical Specifications," NUREG-0800, March 2007 (ADAMS Accession No. ML070380228).

American Society of Mechanical Engineers / American Nuclear Society, ASME/ANS Probabilistic Risk Assessment (PRA) Standard ASME/ANS RA-Sa-2009, Addenda to ASME RA-S-2008, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," February 2, 2009.

Nuclear Energy Institute, "Probabilistic Risk Assessment (PRA) Peer Review Process Guidance," Revision 1, NEI 00-02, May 19, 2006 (ADAMS Accession No. ML061510619) and NEI 00-02 Appendix D, "Self Assessment Process for Addressing ASME PRA Standard RA-Sb-2005, as endorsed by NRC Regulatory Guide 1.200," November 15, 2006 (ADAMS Accession No. ML063390593).

Nuclear Energy Institute, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard," NEI 05-04, Revision 2, November 2008 (ADAMS

Accession No. ML083430462).

Letter from George Gellrich to U.S. Nuclear Regulatory Commission, "License Amendment Request: Revise Technical Specification Section 5.5.16 for Permanent Extension of Type A and C Leak Rate Test Frequencies," September 18, 2014 (ADAMS Accession No. ML14265A219).

U.S. Nuclear Regulatory Commission, NRC Internal Memorandum, P. Hiland to B. Sheron, "Safety/Risk Assessment Results for Generic Issue 199, 'Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants,'" September 2, 2010 (ADAMS Accession No. ML100270582), and Generic Issue 199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants," September 2, 2010 (ADAMS Accession No. ML101970221).

U.S. Nuclear Regulatory Commission, "Notification of Issue with NRC-Approved Technical Specifications Task Force (TSTF) Traveler TSTF-425, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – RITSTF Initiative 5b,'" April 14, 2010 (ADAMS Accession No. ML100990099).

Federal Regulation, U.S. Code of Federal Regulations, "Domestic Licensing of Production and Utilization Facilities – Application for amendment of license, construction permit, or early site permit," Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 90.

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications – Combustion Engineering Plants," Volumes 1 and 2, NUREG-1432, Revision 4, April 2012 (ADAMS Accession Nos. ML12102A165 and ML12102A169).

Letter from George Gellrich to U.S. Nuclear Regulatory Commission, "Request for Additional Information Regarding Permanent Extension of Type A and C Leak Rate Test Frequencies License Amendment Request," February 17, 2015 (ADAMS Accession No. ML15051A409).

Letter from George Gellrich to U.S. Nuclear Regulatory Commission, "Request for Additional Information Regarding the National Fire Protection Association Standard 805 License Amendment Request," February 9, 2015 (ADAMS Accession No. ML15043A249).

Nuclear Management and Resources Council, Inc. "Guidelines for Industry Actions to Assess Shutdown Management," NUMARC 91-06, December 1991 (ADAMS Accession No. ML14365A203).

Principal Contributors: David J. Gennardo
Jonathan E. Evans
Alexander N. Chereskin

Date: August 17, 2015

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

Sincerely,

/RA/

Alexander N. Chereskin, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures:
1. Amendment No. 314 to DPR-53
2. Amendment No. 292 to DPR-69
3. Safety Evaluation

cc w/encls: Distribution via Listserv

DISTRIBUTION:

PUBLIC LPLI-1 R/F	RidsNrrDorlDpr	RidsNrrDorlLpli-1
RidsNrrPMCalvertCliffs	RidsNrrDraApla	RidsNrrLAKGoldstein
RidsNrrDssStsb	G.Dentel, RI	RidsRgn1MailCenter
D. Gennardo, NRR	J. Evans, NRR	RidsAcrsAcnwMail_CTR

ADAMS Accession No. ML15211A005 *via dated memo

OFFICE	DORL/LPLI-1/PM	DORL/LPLI-1/LA	DRA/APLA/BC	DSS/STSB/BC
NAME	AChereskin	KGoldstein	SRosenberg*	RElliot
DATE	8/05/2015	8/05/2015	7/29/2015	8/04/2015
OFFICE	OGC	DORL/LPLI-1/BC(A)	DORL/LPLI-1/PM	
NAME	JWachutka	MDudek	AChereskin	
DATE	8/12/2015	8/14/2015	8/17/2015	

OFFICIAL RECORD COPY