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

June 26, 2009

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: TECHNICAL SPECIFICATION CHANGE TSTF-423, RISK-INFORMED MODIFICATION TO SELECTED REQUIRED ACTION END STATES FOR BWR PLANTS, USING THE CONSOLIDATE LINE ITEM IMPROVEMENT PROCESS (TAC NO. MD5859)

Dear Mr. Pardee:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 187 to Facility Operating License No. NPF-62 for the Clinton Power Station (CPS), Unit No. 1. The amendment is in response to your application dated June 21, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071770423), as supplemented by letter dated January 30, 2009 (ADAMS Accession No. ML090350151). AmerGen Energy Company (previous licensee), now Exelon Generation Company, submitted a license amendment request (LAR) regarding the CPS, Unit 1, to the Nuclear Regulatory Commission (NRC). The proposed amendment would modify the technical specifications to risk-informed requirements regarding required action end states. In the LAR, CPS proposes to adopt Technical Specification Task Force (TSTF)-423, Revision 0 (Reference 7), to the Boiling-Water Reactor (BWR) Standard Technical Specifications (STS) (NUREG 1434), which incorporates the BWR Owners Group approved Topical Report NEDC-32988-A, Revision 2, "Technical Justification to Support Risk Informed Modification to Selected Required Action End States for BWR Plants" into the BWR STS. This operating license improvement was made available by the NRC on March 23, 2006 (71 FR 14726), as part of the consolidated line item improvement process.

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

Sincerely,

Marshall David FOR

Stephen P. Sands, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosures:
1. Amendment No. 187 to NPF-62
2. Safety Evaluation

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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 187
License No. NPF-62

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

   A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated June 21, 2007, as supplemented by letter dated January 30, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-62 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No.187, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

CGoodwin FOR

Stephen J. Campbell, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications and Facility Operating License

Date of Issuance: June 26, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 187

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

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

Remove	Insert
License NPF-62	License NPF-62
Page 3	Page 3
TS	TS
3.3-81	3.3-81
3.5-2	3.5-2
3.5-3	3.5-3
3.6-22	3.6-22
3.6-24	3.6-24
---------	3.6-27a
3.6-32	3.6-32
3.6-43	3.6-43
3.6-51	3.6-51
3.6-52	3.6-52
3.6-69	3.6-69
3.7-1	3.7-1
3.7-2	3.7-2
3.7-4	3.7-4
3.7-5	3.7-5
3.7-6	3.7-6
3.7-8	3.7-8
3.7-11	3.7-11
3.8-3	3.8-3
3.8-24	3.8-24
3.8-24a	3.8-24a
3.8-34	3.8-34
3.8-35	3.8-35
3.8-40	3.8-40

(4) Exelon Generation Company, pursuant to the Act and to 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Exelon Generation Company is authorized to operate the facility at reactor core power levels not in excess of 3473 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 187, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3.3 INSTRUMENTATION

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

LCO 3.3.8.2 One RPS electric power monitoring assembly shall be OPERABLE for each inservice RPS special solenoid power supply or alternate power supply.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both inservice power supplies with the electric power monitoring assembly inoperable.	A.1 Remove associated inservice power supply(s) from service.	1 hour
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- B.1 Be in MODE 3.	12 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 4 or 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	C.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two ECCS injection subsystems inoperable. <u>OR</u> One ECCS injection and one ECCS spray subsystem inoperable.	C.1 Restore one ECCS injection/spray subsystem to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------- D.1 Be in MODE 3.	 12 hours
E. One ADS valve inoperable.	E.1 Restore ADS valve to OPERABLE status.	14 days
F. One ADS valve inoperable. <u>AND</u> One low pressure ECCS injection/spray subsystem inoperable.	F.1 Restore ADS valve to OPERABLE status. <u>OR</u> F.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	72 hours 72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two or more ADS valves inoperable. OR Required Action and associated Completion Time of Condition E or F not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------- G.1 Be in MODE 3.	12 hours
H. HPCS and Low Pressure Core Spray (LPCS) Systems inoperable. OR Three or more ECCS injection/spray subsystems inoperable. OR HPCS System and one or more ADS valves inoperable. OR Two or more ECCS injection/spray subsystems and one or more ADS valves inoperable.	H.1 Enter LCO 3.0.3.	Immediately

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Low-Low Set (LLS) Valves

LCO 3.6.1.6 The LLS function of five safety/relief valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LLS valve inoperable.	A.1 Restore LLS valve to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met.	------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- B.1 Be in MODE 3.	 12 hours
C. Two or more LLS valves inoperable.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.7 Residual Heat Removal (RHR) Containment Spray System

LCO 3.6.1.7 Two RHR containment spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR containment spray subsystem inoperable.	A.1 Restore RHR containment spray subsystem to OPERABLE status.	7 days
B. Two RHR containment spray subsystems inoperable.	B.1 Restore one RHR containment spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- C.1 Be in MODE 3.	 12 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.9 Feedwater Leakage Control System (FWLCS)

LCO 3.6.1.9 Two FWLCS subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FWLCS subsystem inoperable.	A.1 Restore FWLCS subsystem to OPERABLE status.	30 days
B. Two FWLCS subsystems inoperable.	B.1 Restore one FWLCS subsystem to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- C.1 Be in MODE 3.	 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.9.1	Perform a system functional test of each FWLCS subsystem.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

LCO 3.6.2.3 Two RHR suppression pool cooling subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- B.1 Be in MODE 3.	 12 hours
C. Two RHR suppression pool cooling subsystems inoperable.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

3.6 CONTAINMENT SYSTEMS

3.6.4.1 Secondary Containment

LCO 3.6.4.1 The secondary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the primary or secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Secondary containment inoperable in MODE 1, 2, or 3.	A.1 Restore secondary containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------- B.1 Be in MODE 3.	 12 hours

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.4.3 Standby Gas Treatment (SGT) System

LCO 3.6.4.3 Two SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the primary or secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------- B.1 Be in MODE 3.	 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the primary or secondary containment, or during OPDRVs.	-------------NOTE------------ LCO 3.0.3 is not applicable. ----------------------------	
	C.1 Place OPERABLE SGT subsystem in operation.	Immediately
	<u>OR</u>	
	C.2.1 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
	C.2.2 Initiate action to suspend OPDRVs.	Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------	
	D.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two or more drywell post-LOCA vacuum relief subsystems inoperable for reasons other than Condition A.	C.1 Restore drywell post-LOCA vacuum relief subsystems to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 36 hours
E. Required Action and associated Completion Time of Condition B or C not met.	-------------NOTE----------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- E.1 Be in MODE 3	 12 hours

3.7 PLANT SYSTEMS

3.7.1 Division 1 and 2 Shutdown Service Water (SX) Subsystems and Ultimate Heat Sink (UHS)

LCO 3.7.1 Division 1 and 2 SX subsystems and the UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. UHS water volume not within limit	A.1 Restore UHS water volume to within limit.	90 days
B. Division 1 or 2 SX subsystem inoperable.	------------NOTES------------ 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources—Operating," for diesel generator made inoperable by SX. 2. Enter applicable Conditions and Required Actions of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," for RHR shutdown cooling subsystem made inoperable by SX. ----------------------------- B.1 Restore SX subsystem to OPERABLE status.	 72 hours
C. Required Action and associated Completion Time of Condition B not met.	----------NOTE--------------- LCO 3.0.4.a is not applicable when entering MODE 3. ----------------------------- C.1 Be in MODE 3.	 12 hours

(continued)

Actions (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify UHS water volume is ≥ 593 acre-ft.	In accordance with UHS Erosion, Sediment Monitoring, and Dredging Program
SR 3.7.1.2	Verify each required SX subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.1.3	Verify each SX subsystem actuates on an actual or simulated initiation signal.	24 months

3.7 PLANT SYSTEM

3.7.3 Control Room Ventilation System

LCO 3.7.3 Two Control Room Ventilation subsystems shall be OPERABLE.

-------------------------NOTE--------------------------
The control room envelope (CRE) boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the primary or secondary containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Control Room Ventilation subsystem inoperable for reasons other than Condition C.	A.1 Restore Control Room Ventilation subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- B.1 Be in MODE 3.	12 hours
C. One or more Control Room Ventilation subsystems inoperable due to inoperable CRE boundary in MODE 1, 2, or 3.	C.1 Initiate action to implement mitigating actions. AND C.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. AND C.3 Restore CRE boundary to OPERABLE status.	Immediately 24 hours 90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and Associated Completion Time of Condition C not met in MODE 1, 2, or 3.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 36 hours
E. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the primary or secondary containment, during CORE ALTERATIONS, or during OPDRVs.	------------NOTE------------- LCO 3.0.3 is not applicable. ---------------------------- E.1 Place OPERABLE Control Room Ventilation subsystem in high radiation mode. OR E.2.1 Suspend movement of irradiated fuel assemblies in the primary and secondary containment. AND E.2.2 Suspend CORE ALTERATIONS. AND E.2.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately Immediately
F. Two Control Room Ventilation subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition C.	------------NOTE------------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- F.1 Be in MODE 3.	 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. Two Control Room Ventilation subsystems inoperable during movement of irradiated fuel assemblies in the primary or secondary containment, during CORE ALTERATIONS, or during OPDRVs. OR One or more Control Room Ventilation subsystems inoperable due to inoperable CRE boundary during movement of irradiated fuel assemblies in the primary or secondary containment, during CORE ALTERATIONS, or during OPDRVs.	G.1	Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	AND		
	G.2	Suspend CORE ALTERATIONS.	Immediately
	AND		
	G.3	Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each Control Room Ventilation subsystem with flow through the makeup filter for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Operate each Control Room Ventilation subsystem with flow through the recirculation filter for ≥ 15 minutes.	31 days

(continued)

3.7 PLANT SYSTEMS

3.7.4 Control Room Air Conditioning (AC) System

LCO 3.7.4 Two control room AC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the primary or secondary containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One control room AC subsystem inoperable.	A.1 Restore control room AC subsystem to OPERABLE status.	30 days
B. Two control room AC subsystems inoperable.	B.1 Verify control room area temperature ≤ 86 °F. AND B.2 Restore one control room AC subsystem to OPERABLE status.	Once per 4 hours 7 days
C. Required Action and Associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- C.1 Be in MODE 3.	 12 hours

(continued)

3.7 PLANT SYSTEMS

3.7.5 Main Condenser Offgas

LCO 3.7.5 The radioactivity rate of the noble gases measured at the offgas recombiner effluent shall be ≤ 289 mCi/second after decay of 30 minutes.

APPLICABILITY: MODE 1,
MODES 2 and 3 with any main steam line not isolated and steam jet air ejector (SJAE) in operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Radioactivity rate of the noble gases not within limit.	A.1 Restore radioactivity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines.	12 hours
	<u>OR</u>	
	B.2 Isolate SJAE.	12 hours
	<u>OR</u>	
	------------NOTE------------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------	
	B.3 Be in MODE 3.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two offsite circuits inoperable.	C.1	Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	AND		
	C.2	Restore one offsite circuit to OPERABLE status.	24 hours
D. One offsite circuit inoperable. AND One required DG inoperable.	D.1	Restore offsite circuit to OPERABLE status.	12 hours
	OR		
	D.2	Restore required DG to OPERABLE status.	12 hours
E. Two required DGs inoperable.	E.1	Restore one required DG to OPERABLE status.	2 hours OR 24 hours if Division 3 DG is inoperable
F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.	------------NOTE------------- LCO 3.0.4.a is not applicable when entering MODE 3. -----------------------------		
	F.1	Be in MODE 3.	12 hours

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The Division 1, Division 2, Division 3, and Division 4 DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One battery charger on Division 1 or 2 inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. <u>AND</u>	2 hours
	A.2 Verify battery float current $\leq$ 2 amps. <u>AND</u>	Once per 12 hours
	A.3 Restore battery charger to OPERABLE status.	7 days
B. One battery on Division 1 or 2 inoperable.	B.1 Restore battery to OPERABLE status.	2 hours
C. Division 1 or 2 DC electrical power subsystem inoperable for reasons other than Condition A or B.	C.1 Restore Division 1 and 2 DC electrical power subsystems to OPERABLE status.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time for Condition A, B, or C not met.	------------NOTE----------- LCO 3.0.4.a is not applicable when entering MODE 3. --------------------------	
	D.1 Be in MODE 3.	12 hours
E. Division 3 or 4 DC electrical power subsystem inoperable.	E.1 Declare High Pressure Core Spray System inoperable.	Immediately
F. Required Action and associated Completion Time for Condition E not met.	F.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	F.2 Be in MODE 4.	36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters—Operating

LCO 3.8.7 The Division 1, 2, 3, and 4 inverters, and A and B RPS solenoid bus inverters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems—Operating," with any uninterruptible AC bus de-energized.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Division 1 or 2 inverter inoperable.	A.1 Restore Division 1 and 2 inverters to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	-------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- B.1 Be in MODE 3.	12 hours
C. One or more Division 3 or 4 inverters inoperable.	C.1 Declare High Pressure Core Spray System inoperable.	Immediately
D. One RPS solenoid bus inverter inoperable.	D.1.1 Transfer RPS bus to alternate power source. AND D.1.2 Verify RPS bus supply frequency ≥ 57 Hz. OR D.2 De-energize RPS bus.	1 hour Once per 8 hours thereafter 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Both RPS solenoid bus inverters inoperable.	E.1	De-energize one RPS solenoid bus.	1 hour
F. Required Action and associated Completion Time for Condition C, D, or E not met.	F.1	Be in MODE 3.	12 hours
	AND		
	F.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, frequency, and alignment to required uninterruptible AC buses and RPS solenoid buses.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Division 1 or 2 DC electrical power distribution subsystems inoperable.	C.1 Restore Division 1 and 2 DC electrical power distribution subsystems to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO
D. Required Action and associated Completion Time of Condition A, B, or C not met.	------------NOTE------------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------------------------- D.1 Be in MODE 3.	12 hours
E. One or more Division 3 or 4 AC, DC, or uninterruptible AC bus electrical power distribution subsystems inoperable.	E.1 Declare High Pressure Core Spray System inoperable.	Immediately
F. Two or more divisions with inoperable distribution subsystems that result in a loss of function.	F.1 Enter LCO 3.0.3.	Immediately

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 187 TO FACILITY OPERATING LICENSE NO. NPF-62

EXELON GENERATION COMPANY, LLC

CLINTON POWER STATION, UNIT NO. 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter dated June 21, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071770423), as supplemented by letter dated January 30, 2009, (ADAMS Accession No. ML090350151), AmerGen Energy Company (the previous licensee, now Exelon Generation Company (EGC)) submitted a license amendment request (LAR) which proposed changes to the technical specifications (TS) for Clinton Power Station (CPS), Unit 1. The LAR would modify the TS to risk-informed requirements regarding required action end states. In the request, CPS planned to adopt Technical Specification Task Force traveler (TSTF) 423, Revision 0, to the Boiling-Water Reactor (BWR) Standard Technical Specifications (STS) (NUREGS 1433 and 1434, Rev. 2). TSTF-423, Revision 0 (Reference 7), incorporates the Boiling-Water Reactor (BWR) Owners Group (BWROG) approved Topical Report NEDC-32988-A, Revision 2, "Technical Justification to Support Risk Informed Modification to Selected Required Action End States for BWR Plants" (Reference 1), into the BWR STS. CPS TS were converted to a set of TS based on NUREG-1434, Revision 0, dated September 1992.

The January 30, 2009, supplement contained clarifying information and did not change the NRC staff's initial proposed finding of no significant hazards consideration.

TSTF-423 is one of the industry's initiatives developed under the Risk Management Technical Specifications program. These initiatives are intended to maintain or improve safety through the incorporation of risk assessment and management techniques in TS, while reducing unnecessary burden and making TS requirements consistent with the Commission's other risk-informed regulatory requirements, in particular the maintenance rule.

Title 10 of the *Code of Federal Regulations*, 10 CFR 50.36(c)(2)(i), "Technical Specifications," states: "When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow the remedial action permitted by the technical specification until the condition can be met." Plant TS provide as part of the remedial action, a completion time (CT) for the plant to either comply with remedial actions or restore compliance with the limiting conditions for operation (LCO). If the LCO or the remedial action cannot be met, then the reactor is required to be shutdown. When the STS and individual plant TS were written, the shutdown condition, or end state specified, was usually cold shutdown. Topical Report NEDC-32988-A, Revision 2 (Reference 1), provides the technical basis to change certain required end states when the TS Actions for remaining in power operation cannot be met within the CT. Most of the requested TS changes permit an end state of hot shutdown (Mode 3), if risk is assessed and managed, rather than an end state of cold shutdown (Mode 4), contained in the current TS. The request was limited to those end states where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical.

The TS for CPS define five operational modes:

- Mode 1 - Power Operation. The reactor mode switch is in run position.
- Mode 2 - Reactor Startup. The reactor mode switch is in refuel position (with all reactor vessel head closure bolts fully tensioned) or in startup/hot standby position.
- Mode 3 - Hot Shutdown. The reactor coolant system (RCS) temperature is above 200 °F (TS specific) and the reactor mode switch is in the shutdown position (with all reactor vessel head closure bolts fully tensioned).
- Mode 4 - Cold Shutdown. The RCS temperature is equal to or less than 200 °F and the reactor mode switch is in shutdown position (with all reactor vessel head closure bolts fully tensioned).
- Mode 5 – Refueling. The reactor mode switch is in the shutdown or refuel position, and one or more reactor vessel head closure bolts are less than fully tensioned.

Modifying the CPS TS to be consistent with TSTF-423 allows a Mode 3 end state rather than a Mode 4 end state for selected initiating conditions in order to perform short duration repairs. Short duration repairs are on the order of 2-to-3 days, but not more than a week.

The licensee stated that the information topical report and TSTF-423, as well as the safety evaluation (SE) prepared by the NRC, were applicable to CPS Unit 1, and provided justification for incorporation of the proposed changes into the CPS Unit 1, TS.

2.0 REGULATORY EVALUATION

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36(c), TS are required to include items in the following eight specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements (SRs); (4) design features; (5) administrative controls; (6) decommissioning; (7) initial notification; and (8) written reports. The NRC staff did not review the LAR with respect to decommissioning, initial notification and written reports, as the licensee did not propose any changes to these specific requirements. The rule does not specify the particular requirements to be included in a plant's TS. As stated in 10 CFR 50.36(c)(2)(i), the "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications." In describing the basis for changing end states, Reference 1 states:

> Cold shutdown is normally required when an inoperable system or train cannot be restored to an operable status within the allowed time. Going to cold shutdown results in the loss of high pressure core cooling systems, challenges the shutdown heat removal systems, and requires restarting the plant. A more preferred operational mode is one that maintains adequate risk levels while repairs are completed without causing unnecessary challenges to plant equipment during shutdown and startup transitions.

CPS is equipped with a motor-driven high pressure core spray (HPCS) system which is powered by an independent diesel generator (DG). The CPS HPCS would not be lost by transitioning to Mode 4. The NRC staff noted staying in Mode 3 with sufficient steam pressure would maintain availability of the steam driven reactor core isolation cooling (RCIC) system.

In the end state changes under consideration, a problem with a component or train has, or will, result in a failure to meet TS, and a controlled shutdown is directed because a TS Action requirement cannot be met within the TS CT.

Most of today's TS and the design basis analyses were developed under the perception that putting a plant in cold shutdown would result in the safest condition and the design basis analyses would bound credible shutdown accidents. In the late 1980s and early 1990s, the NRC and licensees recognized that this perception was incorrect and took corrective actions to improve shutdown operation. At the same time, standard TS were developed and many licensees improved their TS. Since enactment of a shutdown rule was expected, almost all TS changes involving power operation, including a revised end state requirement, were postponed (see, for example the Final Policy Statement on TS Improvements, Reference 2). However, in the mid 1990s, the Commission decided a shutdown rule was not necessary in light of industry improvements. Controlling shutdown risk encompasses control of conditions that can cause potential initiating events and responses to those initiating events that do occur. Initiating events are a function of equipment malfunctions and human error. Responses to events are a function of plant sensitivity, ongoing activities, human error, defense-in-depth, and additional equipment malfunctions.

In practice, the risk during shutdown operations is often addressed via voluntary actions and application of 10 CFR 50.65 (Reference 3), the maintenance rule. Section 50.65(a)(4) states:

> Before performing maintenance activities ..., the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components that a risk-informed evaluation process has shown to be significant to public health and safety.

Regulatory Guide (RG) 1.182 (Reference 4) provides guidance on implementing the provisions of 10 CFR 50.65(a)(4) by endorsing the revised Section 11 to NUMARC 93-01, Revision 2 (Reference 6).

3.0 TECHNICAL EVALUATION

The changes proposed in the amendment are consistent with the changes proposed and justified in Reference 1, and have already been approved by the associated NRC SE for

TSTF-423 (Reference 5). In its application, the licensee commits to TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A," (Reference 8), which addresses a variety of issues such as considerations and compensatory actions for risk-significant plant configurations. An overview of the generic evaluation and associated risk assessment is provided below, along with a summary of the associated TS changes justified by Reference 1.

3.1 Risk Assessment

The objective of the BWROG topical report (Reference 1) risk assessment was to show that any risk increases associated with the proposed changes in TS end states are either negligible or negative (i.e., a net decrease in risk). The BWROG topical report documents a risk-informed analysis of the proposed TS change. Probabilistic risk assessment (PRA) results and insights are used, in combination with results of deterministic assessments, to identify and propose changes in "end states" for all BWR plants. This is in accordance with guidance provided in RG 1.174 (Reference 9) and RG 1.177 (Reference 10). The three-tiered approach documented in RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decision Making: Technical Specifications," was followed. The first tier of the three-tiered approach includes the assessment of the risk impact of the proposed change for comparison to acceptance guidelines consistent with the Commission's Safety Goal Policy Statement, as documented in RG 1.174. The first tier aims at ensuring that there are no unacceptable temporary risk increases as a result of the TS change, such as when equipment is taken out of service. The second tier addresses the need to preclude potentially high-risk configurations which could result if equipment is taken out of service concurrently with the equipment out of service as allowed by this TS change. The third tier addresses the application of 10 CFR 50.65 (a)(4) of the Maintenance Rule for identifying risk-significant configurations resulting from maintenance related activities and taking appropriate compensatory measures to avoid such configurations.

This TS invokes a risk assessment because 10 CFR 50.65(a)(4) is applicable to maintenance related activities and does not cover other operational activities beyond the effect they may have on existing maintenance related risk.

As discussed in the NRC staff's SE dated September 27, 2002, the NRC found the BWROG's risk assessment approach used in NEDC-32988-A was comprehensive and acceptable. In addition, the analyses show that the three-tiered approach criteria for allowing TS changes are met as follows:

- Risk Impact of the Proposed Change (Tier 1): The risk changes associated with the TS changes in TSTF-423, in terms of mean yearly increases in core damage frequency (CDF) and large early release frequency (LERF), are risk neutral or risk beneficial. In addition, there are no significant temporary risk increases, as defined by RG 1.177 criteria, associated with the implementation of the TS end state changes.

- Avoidance of Risk-Significant Configurations (Tier 2): The performed risk analyses, which are based on single LCOs, indicate that there are no high-risk configurations associated with the TS end state changes. The reliability of redundant trains is normally covered by a single LCO. When multiple LCOs occur, which affect trains in several systems, the plant's risk-informed configuration risk management program, or the risk assessment and management program implemented in response to the Maintenance Rule, 10 CFR 50.65 (a)(4), shall ensure that high-risk configurations are avoided. As part of the implementation of TSTF-423, the licensee has committed to follow Section 11 of NUMARC 93-01, Revision 3, and include guidance in appropriate plant procedures and/or administrative controls to preclude high-risk plant configurations when the plant is at the proposed end state. The NRC staff finds that such guidance is adequate for preventing risk-significant plant configurations.

- Configuration Risk Management (Tier 3): The licensee is required to comply with 10 CFR 50.65 (a)(4) to assess and manage the risk from maintenance activities. This program can support the licensee's decision in selecting the appropriate actions to control risk for most cases in which a risk informed TS is entered.

The generic risk impact of the end state mode change was evaluated by the NRC subject to the following assumptions which were incorporated into TSTF-IG-05-02 (Reference 8):

1. The entry into the end state is initiated by the inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS.

2. The primary purpose of entering the end state is to correct the initiating condition and return to power as soon as is practical.

3. When Mode 3 is entered as the repair end state, the time the reactor coolant pressure is above 500 psig will be minimized, generally less than 12 hours. If reactor coolant pressure is above 500 psig for more than 12 hours, the associated plant risk will be assessed and managed.

These assumptions are consistent with typical entries into Mode 3 for short duration repairs, which is the intended use of the TS end state changes. The NRC staff concludes that, going to Mode 3 (hot shutdown) instead of going to Mode 4 (cold shutdown) to carry out equipment repairs, that are of short duration, does not have any adverse effect on plant risk.

In its LAR, the licensee committed to follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision 3, July 2000. NUMARC 93-01 provides guidance on implementing the provisions of 10 CFR 50.65(a)(4). Also, per the letter, the licensee will follow the guidance established in TSTF-IG-05-02, "Implementation Guidance for TSTF-423, Revision 0, 'Technical Amendment Specifications End States, NEDC-32988-A,'" Revision 1, March 2007. By following the Implementation Guidance, the licensee will ensure that defense-in-depth is maintained for key safety functions by ensuring availability of Tier 2 systems/equipment necessary for safe shutdown. Therefore, the staff finds the licensee's commitment to be acceptable.

3.2 Request for Additional Information

While reviewing the TSTF-423 license amendment request for the CPS, the NRC staff identified two concerns. First, revising the TS to allow the licensees to remain in Mode 3 indefinitely with inoperable systems would also permit starting up using the allowance of LCO 3.0.4(a) with inoperable systems or equipment. This is inconsistent with the purpose of TSTF-423 which is to allow licensees to remain in Mode 3 (instead of proceeding to cold shutdown) while conducting repairs, and then return to Mode 1. The second concern is that primary containment should not be treated the same as the other systems included in the TSTF-423. Primary containment was not included in the TSTFs for the pressurized-water reactor designs (i.e., TSTF-422 for Combustion Engineering Plants; TSTF-431 for Babcock and Wilcox plants). The reason for this is that unlike the other systems included in TSTF-423, an inoperable primary containment constitutes a loss of one of the three fission product barriers. Staying at hot conditions in such an unanalyzed condition is not consistent with maintaining defense-in-depth which is one of the five key principles of risk-informed regulations in RG 1.174. From the RG perspective, the core damage risks are found to be acceptable, however, the compensatory measures identified (i.e., availability of secondary containment, ventilation treatment systems, etc.) do not provide an acceptable defense-in-depth approach, and therefore, an equivalent level of protection as provided by the primary containment, could not be attained by the compensatory measures.

To address these two concerns, the NRC staff issued a request for additional information (RAI) (ADAMS Accession No. ML090080309) to the licensee to on January 08, 2009. The following summarizes the NRC staff's questions, and the licensee's responses:

RAI 1: The licensee was requested to demonstrate how they would prevent LCO 3.0.4(a) from being inappropriately invoked during startup to facilitate going up in mode with inoperable systems or equipment.

RAI 2: The licensee was requested to demonstrate how they would maintain an equivalent level of protection while operating in Mode 3 with an inoperable primary containment.

On January 30, 2009, the licensee provided their response (ADAMS Accession No. ML090350151) to the NRC staff's RAI as follows:

Response to RAI 1:
To prevent LCO 3.0.4(a) from being inappropriately invoked during startup to facilitate going up in mode with inoperable systems or equipment, EGC proposed the insertion of the following Note into those Required Actions affected by TSTF-423:

NOTE
LCO 3.0.4.a is not applicable when entering MODE 3.

In addition, EGC indicated that some of the previously submitted TS have been amended since EGC's request to adopt TSTF-423 at CPS. Accordingly, EGC provided currently implemented versions of TS that were marked up to include the original TSTF-423 adoption markups and the above Note.

Response to RAI 2: EGC indicated that it had evaluated its requests to amend station TS for primary containment and decided to withdraw its request to amend this TS. Because Mode 3 is no longer the requested end state for primary containment, EGC determined that it is necessary to revise its original commitment to follow guidance established in TSTF-IG-05-02, "Implementation Guidance for TSTF-423, Revision 0, Technical Specifications End States, NEDC-32988-A," Revision 1, to indicate that the following statement on Page 2 no longer applies:

> If Primary Containment is not operable, Secondary Containment and Standby Gas Treatment must be verified operable in order to remain in Mode 3.

Conclusion:

The NRC reviewed the licensee's response to the staff's RAIs, and found to be acceptable since the amended station TS prevent a) operation in Mode 3 without primary containment, and b) starting up with inoperable systems or equipment.

3.3 Assessment of TS Changes

The following are the changes, including a synopsis of the STS LCO, and a conclusion of acceptability.

3.3.1 LCO 3.3.8.2: Reactor Protection System (RPS) Electric Power Monitoring

RPS electric power monitoring system is provided to isolate the RPS bus from the normal uninterruptible power supply or an alternate power supply in the event of over voltage, under voltage, or under frequency. This system protects the load connected to the RPS bus against unacceptable voltage and frequency conditions and forms, an important part of the primary success path of the essential safety circuits. Some of the essential equipment powered from the RPS buses include the RPS logic, scram solenoids, and various valve isolation logic. The TS change allows the plant to remain in Mode 3 until the repairs are completed.

LCO: For Modes 1, 2, 3, and Modes 4 and 5 (with any control rod withdrawn from a core cell containing one or more fuel assemblies), one RPS electric power monitoring assembly shall be OPERABLE for each in-service RPS special solenoid power supply, or alternate power supply.

Condition Requiring Entry into End State: If the LCO cannot be met, the associated in-service power supply(s) must be removed from service within 1 hour (Required Action A.1). In Modes 1, 2, and 3, if the in-service power supply(s) cannot be removed from service within the allotted time, the plant must be placed in Mode 3 within 12 hours and Mode 4 within 36 hours (Required Actions B.1 and B.2).

Modification for End State Required Actions: The change allows the plant to remain in Mode 3 until the repair actions are completed. Required Action B.2 which required the plant to be in Mode 4, is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action for B.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: To reach Mode 3, per the TS, there must be a functioning power supply with degraded protective circuitry in operation. However, the over voltage, under voltage, or under frequency condition must exist for an extended time period to cause damage. There is a low probability of this occurring in the short period of time that the plant would remain in Mode 3 without this protection.

The specific failure condition of interest is not risk significant for BWR PRAs. If the required restoration actions cannot be completed within the specified time, going into Mode 4 at CPS would cause loss of the high pressure RCIC system and loss of the power conversion system (condenser), and would require activating the residual heat removal (RHR) system.

CPS's motor driven HPCS system design differs from the model safety evaluation discussed in TSTF-423. HPCS is powered by an independent DG, therefore, HPCS would not be lost by transitioning to Mode 4. Staying in Mode 3 with sufficient steam pressure would also maintain availability of the steam driven RCIC system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action for B.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.2 <u>LCO 3.5.1: Emergency Core Cooling Systems (ECCS) - Operating</u>

The ECCS systems provide cooling water to the core in the event of a loss-of-coolant accident (LOCA). This set of ECCS TS provides the operability requirements for the various ECCS subsystems as described below. This TS change would delete the secondary actions. The plant can remain in Mode 3 until the required repair actions are completed. The reactor is not depressurized.

<u>LCO:</u> Each ECCS injection/spray subsystem and the automatic depressurization system (ADS) function of seven safety/relief valves shall be OPERABLE.

<u>Condition Requiring Entry into End State</u>: If the LCO cannot be met, the following actions must be taken for the listed conditions:

a. If one low-pressure ECCS injection/spray subsystem is inoperable, the subsystem must be restored to operable status in 7 days (Condition A).

b. If the HPCS system is inoperable, the RCIC system must be verified to be operable by administrative means within 1 hour and the HPCS system restored to operable status within 14 days (Condition B).

c. If two ECCS injection subsystems are inoperable or one ECCS injection subsystem and one ECCS spray system are inoperable, one ECCS injection/spray subsystem must be restored to operable status within 72 hours (Condition C).

d. If the Required action and associated Completion Time of Condition A, B, or C is not met, then placed the plant in Mode 3 within 12 hours and in Mode 4 with in 36 hours (Condition D).

e. If one ADS valve is inoperable, it must be restored to operable status within 14 days (Condition E).

f. If one ADS valve is inoperable and one low-pressure ECCS injection/spray subsystem is inoperable, the ADS valve must be restored to operable status within 72 hours or the low-pressure ECCS injection/spray subsystem must be restored to operable status within 72 hours (Condition F).

g. If two or more ADS valves become inoperable, or the Required Action and associated Completion Time of Condition E or F is not met, the plant must be placed in Mode 3 within 12 hours and the reactor steam dome pressure reduced to less than 150 psig within 36 hours (Condition G).

Modification for End State Required Actions:

a. No change in Required Action for Condition A.

b. No change in Required Action for Condition B.

c. No change in Required Action for Condition C.

d. If the Required Action, and associated Completion Time of Condition A, B, or C is not met, then place the plant in Mode 3 within 12 hours (Condition D.1). Required Action D.2 is deleted allowing the plant to stay in Mode 3 while completing repairs). A Note is added to the TS Required Action D.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

e. No change in Required Action for Condition E.

f. No change in Required Action for Condition F.

g. If two or more ADS valves become inoperable or the required Actions and associated Completion Times of Condition E or F not met, the plant must be placed in Mode 3 within 12 hours (Condition G.1). Required Action G.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action G.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and the Mode 3 end state. The NRC staff conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in the current end state Mode 4. For CPS going to Mode 4 for one ECCS subsystem or one ADS valve would cause loss of the high pressure core cooling RCIC system, and loss of the power conversion system, and would require activating the RHR system. In addition, plant EOPs direct the operator to take control of the depressurization function if low-pressure injection mode of RHR or the core spray system are needed for RPV water makeup and cooling.

The Note "LCO 3.0.4.a is not applicable" in TS Required Actions D.1 and G.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.3 LCO 3.6.1.6: Low-Low Set (LLS) Valves

The function of LLS is to prevent excessive short-duration safety relief valve (SRV) cycling during an overpressure event. This TS provides operability requirements for the four LLS SRVs as described below. The TS change allows the plant to remain in Mode 3 until the repairs are completed.

LCO: The LLS function of five safety/relief valves shall be OPERABLE.

Condition Requiring Entry into End State: If one LLS valve is inoperable, it must be returned to operability within 14 days. If the LLS valve cannot be returned to operable status within the allotted time, the plant must be placed in Mode 3 within 12 hours and in Mode 4 within 36 hours.

Modification for End State Required Actions: The TS change would keep the plant in Mode 3 until the required repair actions are completed. The plant would not be taken into Mode 4 (cold shutdown) (delete Required Action B.2). A Note is added to the TS Required Action B.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3. (Note: Required Action for two or more LLS valves inoperable was changed from Condition B to new Condition C without changing the Required Action End State.)

Assessment: The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and the Mode 3 end state. The NRC staff conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4, the current end state. For CPS, going to Mode 4 for one LLS inoperable SRV would cause loss of the high pressure RCIC system, and loss of the power conversion system, and would require activating the RHR system. With one LLS valve inoperable, the remaining valves are adequate to perform the required function. The plant EOPs direct the operator to take control of the depressurization function if low pressure injection mode of RHR or the core spray system are needed for RPV water makeup and cooling. The NRC staff finds that this change allows repairs of the inoperable SRV to be performed in a plant operating mode with lower risks.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action B.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.4 LCO 3.6.1.7: RHR Containment Spray System

The primary containment must be able to withstand a postulated bypass leakage pathway that allows the passage of steam from the drywell directly into the primary containment airspace, bypassing the suppression pool. The primary containment also must be able to withstand a low energy steam release into the primary containment airspace. The RHR Containment Spray System is designed to mitigate the effects of bypass leakage and low-energy line breaks.

LCO: Two RHR containment spray subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one RHR Containment Spray Subsystem is inoperable, it must be restored to operable status within 7 days (Required Action A.1). If two RHR Containment Spray Subsystems are inoperable, one of them must be restored to operable status within 8 hours (Required Action B.1). If the RHR Containment Spray System cannot be restored to operable status within the allotted time, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: Required Action C.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action C.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: The primary containment is designed with a suppression pool so that, in the event of a LOCA, steam released from the primary system is channeled through the suppression pool water and condensed without producing significant pressurization of the primary containment. The primary containment is designed so that with the pool initially at the minimum water level and the worst single-failure of the primary containment heat removal systems, suppression pool energy absorption combined with subsequent operator controlled pool cooling will prevent the primary containment pressure from exceeding its design value.

However, the primary containment must also withstand a postulated bypass leakage pathway that allows the passage of steam from the drywell directly into the primary containment airspace, bypassing the suppression pool. The primary containment also must withstand a postulated low energy steam release into the primary containment airspace. The main function of the RHR containment spray system is to suppress steam, which is postulated to be released into the primary containment airspace through a bypass leakage pathway and a low-energy line break under design-basis accident (DBA) conditions, without producing significant pressurization of the primary containment (i.e., ensure that the pressure inside primary containment remains within analyzed design limits). Under the conditions assumed in the DBA, steam blown down from the break could find its way into the primary containment through a bypass leakage pathway. In addition to the DBA, a postulated low-energy pipe break could add more steam into the primary containment airspace. Under such an extremely unlikely scenario (very small frequency of a DBA combined with the likelihood of a bypass pathway and a concurrent low-energy pipe break inside the primary containment), the RHR containment spray system could be needed to condense steam so that the pressure inside the primary containment remains within analyzed design limits.

Furthermore, containments have considerable margin to failure above the design limit (it is very likely that the containment will be able to withstand pressures as much as three times the design limit). For these reasons, the unavailability of one or both RHR containment spray subsystems has no significant impact on CDF or LERF, even for accidents initiated during operation at power. Therefore, it is very unlikely that the RHR containment spray system will be challenged to mitigate an accident occurring during power operation. This probability becomes extremely unlikely for accidents that would occur during a small fraction of the year (less than 7 days) during which the plant would be in Mode 3 (associated with lower initial energy level and reduced decay heat load as compared to power operation) to repair the failed RHR containment spray system.

Section 5.1 of Reference 5, summarizes the NRC staff's risk-informed basis for approval of TR Section 4.5.2.6 and LCO 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System." Specifically, staying in Mode 3 instead of going to Mode 4 to repair the RHR containment spray system (one or both trains) is supported by defense-in-depth considerations. Section 5.2 of Reference 5 compares Mode 3 and Mode 4 end states with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments used according to the "integrated decision-making" process of Regulatory Guides 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable RHR containment spray system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action C.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.5 <u>LCO 3.6.1.9: Feedwater Leakage Control System (FWLCS)</u>

Following a DBA LOCA, the FWLCS supplements the isolation function of primary containment isolation valves in the feedwater lines which also penetrate the secondary containment. These penetrations are sealed by water from the FWLCS to prevent fission products (post-LOCA containment atmosphere) from leaking past the isolation valves and bypassing the secondary containment after a DBA LOCA.

Note: The licensee's letter (ADAMS Accession No. ML071770423) states:

> "Changes made to CPS TS 3.6.1.9, Feedwater Leakage Control System (FWLCS), are identical to those made in TSTF-423 for STS 3.6.1.8, Penetration Valve Leakage Control System (PVLCS). The FWLCS at CPS serves a similar design purpose as the PVLCS described in STS 3.6.1.8 and CPS, Unit 1 TS 3.6.1.9 was modeled after the STS for the PVLCS."

A comparison of BWR-6's PVLCS design versus that of CPS's FWLCS is provided below:

a. The STS Bases for a representative BWR-6 plant model in TSTF-423, states that Penetration Valve Leakage Control System (PVLCS) supplements the isolation function of primary containment isolation valves (PCIVs) in process lines that also penetrate the secondary containment. These penetrations are sealed by air from the PVLCS to prevent fission products leaking past the isolation valves and bypassing the secondary containment after a Design Basis Accident (DBA) loss of coolant accident (LOCA).

   The Bases also say that the PVLCS consists typically of two independent, manually initiated subsystems, either of which is capable of preventing fission product leakage from the containment post LOCA. Each subsystem is comprised of an air compressor, an accumulator, an injection valve, and three injection headers with separate isolation valves. This system has additional headers, which serve the Main Steam Isolation Valve Leakage Control System and safety/relief valve (S/RV) actuator air accumulators. Each process line has two PCIVs and an additional manual isolation valve outside of the outboard PCIV. The two outboard valves are double disk gate valves. Each valve is provided sealing air from its electrically associated division of PVLCS to the area between the dual disk seats. The PVLCS is started manually.

b. The CPS TS Bases for the Feedwater Leakage Control System (FWLCS), state that FWLCS supplements the isolation function of primary containment isolation valves (PCIVs) in process lines which also penetrate the secondary containment. These penetrations are sealed by water from the FWLCS to prevent fission products from leaking past the isolation valves and bypassing the secondary containment after a Design Basis Accident (DBA) loss of coolant accident (LOCA).

   The FWLCS consists of two independent, manually initiated subsystems. Each subsystem uses its connected train of the RHR system and a header to provide sealing water for pressurizing the feedwater piping either between the inboard and outboard containment isolation check valves or between the outboard containment isolation check valve and the outboard motor–operated gate valve.

The NRC staff concludes that CPS FWLCS is similar to that of the PVLCS. Therefore, the NRC staff's analysis for PVLCS applies to the FWLCS.

LCO: Two FWLCS subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one FWLCS subsystem is inoperable, it must be restored to operable status within 30 days (Required Action A.1). If two FWLCS subsystems are inoperable, one of the FWLCS subsystems must be restored to operable status within 7 days (Required Action B.1). If the FWLCS subsystem cannot be restored to operable status within the allotted time, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: Required Action C.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action C.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment:

The CPS TS Bases for FWLCS indicates that following a DBA LOCA, the FWLCS supplements the isolation function of primary containment isolation valves (PCIVs). This is the same function which is served by the PVLCS. Therefore, the NRC staff can apply the analyses of the PVLCS to the FWLCS.

The BWROG concluded in Reference 1, and as evaluated by the NRC staff in Reference 5, that the condition requiring entry into the end state for PVLCS is not risk significant in BWR PRAs. The unavailability of one or both PVLCS subsystems has no impact on CDF or LERF, irrespective of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the PVLCS system (i.e., the frequency with which the system is expected to be challenged to prevent fission products leaking past the isolation valves and bypassing the secondary containment) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as large early release.

Section 5.1 of Reference 5, summarizes the NRC staff's risk basis for approval of TR Section 4.5.2.7 and LCO 3.6.1.8, "Penetration Valve Leakage Control System (PVLCS)." The basis for staying in Mode 3 instead of going to Mode 4 to repair the PVLCS system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 makes a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable PVLCS system.

Based on the above, the NRC staff finds that the PVLCS and FWLCS both supplement the isolation function of PCIVs, function similarly to minimize offsite dose consequences during accident conditions, and satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). In addition, the NRC staff determined that from a risk perspective, the differences between the two systems are negligible. The licensee's proposed changes to CPS TS LCO 3.6.1.9, "Feedwater Leakage Control

System," are similar to those specified in TSTF-423 for STS 3.6.1.8, "Penetration Valve Leakage Control System." Therefore, the NRC staff finds that applying the change in end state to CPS TS LCO 3.6.1.9 is acceptable.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action C.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.6 LCO 3.6.2.3: RHR Suppression Pool Cooling

Some means must be provided to remove heat from the suppression pool so that the temperature inside the primary containment remains within design limits. This function is provided by two redundant RHR suppression pool cooling subsystems.

LCO: Two RHR suppression pool cooling subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one RHR suppression pool cooling subsystem is inoperable (Condition A), it must be restored to operable status within 7 days (Required Action A.1). If the RHR suppression pool cooling subsystem cannot be restored to operable status within the allotted time (Condition B), the plant must be placed in Mode 3 within 12 hours (Required Action B.1), and in Mode 4 within 36 hours (Required Action B.2).

Modification for End State Required Actions: Required Action B.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. Condition B and Required Action B.1 are retained for one RHR suppression pool cooling subsystem inoperable. A new Condition C is added with Required Actions C.1 and C.2, identical to existing Condition B, with Required Actions B.1 and B.2, to maintain existing requirements unchanged for two RHR suppression pool cooling subsystems inoperable. A Note is added to the TS Required Action B.1 stating that "LCO 3.0.4.a is not applicable when entering Mode 3."

The licensee's letter (ADAMS Accession No. ML071770423), states that changes made to CPS TS 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," are in accordance with the changes made in TSTF-423 for STS 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," with the exception of the action associated with two inoperable RHR Suppression Pool Cooling subsystems. Condition B of STS 3.6.2.3 allows a completion time of 8 hours to return one RHR Suppression Pool Cooling subsystem to operable status in the event two RHR Suppression Pool Cooling subsystems are inoperable. Since CPS TS 3.6.2.3 currently requires entry into Mode 3 and Mode 4 in the event that two RHR Suppression Pool Cooling subsystems are inoperable, this required action is maintained in the proposed CPS TS 3 .6.2.3 markup.

Assessment: The BWROG completed a comparative PRA evaluation of the core damage risks of operation in the current end state versus operation in the Mode 3 end state. The results described in Reference 1, and as evaluated by the NRC staff in Reference 5, indicated that the core damage risks while operating in Mode 3 (assuming the individual failure conditions) are lower or comparable to the current end state. One loop of the RHR suppression pool cooling system is sufficient to accomplish the required safety function. By remaining in Mode 3, HPCS, RCIC, and the power conversion system (condensate) remain available for water makeup and decay heat removal.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action B.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

The licensee is not applying TSTF-423 Condition B of STS 3.6.2.3 which allows a completion time of 8 hours to return one RHR Suppression Pool Cooling subsystem to operable status in the event two RHR Suppression Pool Cooling subsystems are inoperable. The NRC concludes the analyses are not affected by not requesting Condition B of STS 3.6.2.3.

3.3.7 LCO 3.6.4.1: Secondary Containment

Following a DBA, the function of the secondary containment is to contain, dilute, and stop radioactivity (mostly fission products) that may leak from primary containment. Its leak tightness is required to ensure that the release of radioactivity from the primary containment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis and that fission products entrapped within the secondary containment structure will be treated by the standby gas treatment system prior to discharge to the environment.

LCO: The secondary containment shall be OPERABLE.

Condition Requiring Entry into End State: If the secondary containment is inoperable, it must be restored to operable status within 4 hours (Required Action A.1). If it cannot be restored to operable status within the allotted time, the plant must be placed in Mode 3 within 12 hours (Required Action B.1), and in Mode 4 within 36 hours (Required Action B.2).

Modification for End State Required Actions: Required Action B.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action B.1 stating that "LCO 3.0.4.a is not applicable when entering Mode 3."

Assessment: This LCO entry condition does not include gross leakage through an un-isolable release path. The BWROG concluded (Reference 1) that previous generic PRA work related to 10 CFR Part 50 Appendix J requirements has shown that containment leakage is not risk significant. The BWROG assumed primary containment, and the standby gas treatment system would still be operable, thereby minimizing the likelihood of an unacceptable release. By remaining in Mode 3, HPCS, RCIC, and the power conversion system (condensate) remain available for water makeup and decay heat removal.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action B.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.8 LCO 3.6.4.3: Standby Gas Treatment (SGT) System

The function of the SGT system is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a DBA are filtered and adsorbed prior to exhausting to the environment.

LCO: Two SGT subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one SGT subsystem is inoperable, it must be restored to operable status within 7 days (Required Action A.1). If the SGT subsystem cannot be restored to operable status within the allotted time, the plant must be placed in Mode 3 within 12 hours (Required Action B.1) and in Mode 4 within 36 hours (Required Action B.2). In addition, if two SGT subsystems are inoperable in Mode 1, 2, or 3, LCO 3.0.3 must be entered immediately (Required Action D.1).

Modification for End State Required Actions: Required Action B.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. Required Action D.1 is changed to "Be in Mode 3" with a Completion Time of "12 hours." A note is added to the TS Required Actions B.1 and D.1 stating that "LCO 3.0.4.a is not applicable" when entering Mode 3.

Assessment: The unavailability of one or both SGT subsystems has no impact on CDF or LERF, irrespective of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the SGT system (i.e., the frequency with which the system is expected to be challenged to mitigate offsite radiation releases resulting from materials that leak from the primary to the secondary containment above TS limits) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as large early release.

Section 5.1, of Reference 5 evaluates the NRC staff's risk basis for approval of TS 4.5.1.13, 4.5.2.11, and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System." According to this evaluation which applies to BWR-6 design, (CPS is BWR-6), staying in Mode 3 instead of going to Mode 4 to repair the SGT system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 details a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable SGT system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Actions B.1 and D 1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.9 LCO 3.6.5.6: Drywell Post-LOCA Vacuum Relief System

The Mark III pressure suppression containment is designed to condense, in the suppression pool, the steam released into the drywell in the event of a LOCA. The steam discharging to the pool carries the non-condensibles from the drywell. Therefore, the drywell atmosphere changes from low humidity air to nearly 100 percent steam (no air) as the event progresses. When the drywell subsequently cools and depressurizes, the condensed steam must be replaced to avoid excessive weir wall overflow into the drywell. Rapid weir wall overflow must be controlled in a large-break LOCA, so that essential equipment and systems located above the weir wall in the drywell are not subjected to excessive drag and impact loads. The drywell post-LOCA purge vacuum relief subsystems are the means by which non-condensibles are transferred from the primary containment back to the drywell.

LCO: Four drywell post-LOCA vacuum relief subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one drywell purge vacuum relief subsystem is inoperable (Condition B), for reasons other than being not closed, the subsystem(s) must be restored to operable status within 30 days (Required Actions B.1). If two or more drywell post-LOCA vacuum relief subsystem inoperable for reasons other than being not closed (Condition C), the subsystem(s) must be restored to operable status within 72 hours. (Required Action C.1). If the required actions cannot be completed within the allotted time, the plant must be placed in Mode 3 within 12 hours and in Mode 4 within 36 hours (Required Actions D.1 & D.2).

Modification for End State Required Actions: Add a new Condition E for when Required Action and associated Completion Time of Condition B or C not met, the plant must be in Mode 3 in a Completion Time of 12 hours. A Note is added to the TS Required Action E.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3. Change existing Condition D to read: "if Required Action and associated Completion Time of Condition A not met, the plant must be placed in Mode 3 within 12 hours and in Mode 4 within 36 hours."

Assessment: The BWROG concluded (Reference 1) that the condition requiring entry into the End State for an inoperative drywell post-LOCA vacuum relief subsystem is not risk significant in BWR PRAs. With one or more drywell post-LOCA vacuum relief subsystems inoperable or one drywell purge vacuum relief subsystem inoperable, for reasons other than not being closed, the remaining operable vacuum relief subsystems are adequate to perform the depressurization mitigation function. By remaining in Mode 3, HPCS, RCIC, and the power conversion system remain available for water makeup and decay heat removal.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action E.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.10 LCO 3.7.1: Division 1 and 2 Shutdown Service Water (SX) subsystems and Ultimate Heat Sink (UHS)

Division 1 and 2 Shutdown Service Water (SX) subsystems and UHS are designed to provide cooling water for the removal of heat from unit auxiliaries, such as, RHR system heat exchangers, standby diesel generators, and room coolers for ECCS equipment required for a safe reactor shutdown following a DBA or transient.

LCO: Division 1 and 2 SX subsystems and UHS shall be OPERABLE.

Condition Requiring Entry into End State: If Division 1 or 2 SX subsystems is inoperable (Condition B), the SX subsystem must be restored to operable status within 72 hours (Required Action B.1). If the required action and associated completion time of Conditions A or Condition B cannot be met (Condition C), the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: A new Condition C has been created which specifies "If the Required Actions and Associated Completion Times for new Condition B are not met, the plant must be placed in Mode 3 in 12 hours (new Required Action C.1)." A Note is added to the TS Required Action C.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3. Existing Condition C is renumbered to Condition D which states, "If the Required Actions and Associated Completion Times for Condition A are not met or Division 1 and 2 SX systems are inoperable, the plant must be placed in Mode 3 within 12 hours (Required Action D.1) and in Mode 4 within 36 hours (Required Action D.2)."

Assessment: The BWROG concluded (Reference 1) that the condition requiring entry into the End State for the SX and UHS is not risk significant in BWR PRAs. With the specified inoperable components/subsystems, a sufficient number of operable components/subsystems are still available to perform the heat removal function. By remaining in Mode 3, HPCS, RCIC, and the power conversion system remain available for water makeup and decay heat removal.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action C.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.11 LCO 3.7.3: Control Room Ventilation System

The Control Room Ventilation System provides a radiologically-controlled environment from which the unit can be safely operated following a DBA. The safety-related function of the Control Room Ventilation System consists of two independent and redundant high efficiency air filtration subsystems for treatment of re-circulated air or outside supply air. Each subsystem consists of a demister, an electric heater, a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section, a second HEPA filter, a fan, and the associated ductwork and dampers. Demisters remove water droplets from the airstream. Prefilters and HEPA filters remove particulate matter that may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay.

LCO: Two Control Room Ventilation subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one Control Room Ventilation subsystem is inoperable (Condition A), it must be restored to operable status within 7 days (Required Action A.1). If one or more Control Room Ventilation subsystems are inoperable due to an inoperable Control Room Envelope boundary (Condition B), it must be restored to operable status within 90 days, mitigating actions are started immediately and occupant exposures to radiological, chemical and smoke hazards to not exceed limits is verified within 24 hours. If two Control Room Ventilation subsystems are inoperable (Condition E), enter LCO 3.0.3 (Required Action E.1) immediately. If Required Action and associated Completion Time of Condition A or B not met, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: The change adds a new Condition B with Required Action B.1 to be in Mode 3 within 12 hours when Required Action and associated Completion

Time of Condition A are not met in Modes 1, 2, and 3. The change renumbers old Conditions B, C, D, E and F to Conditions C, D, E, F and G. As a result, the old Required Actions C.1 and C.2 (renumbered as D.1 and D.2) apply to the Required Action and Completion time of Condition C for not being met in Modes 1, 2, or 3. The change also renumbers Condition B stated in Condition A statement, to Condition C with no changes to the Required Action and Completion Time for Condition A. Required Action E.1 (renumbered as Required Action F.1) is changed to "Be in Mode 3" within a Completion Time of "12 hours." A Note is added to the TS Required Actions B.1 and F.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: The unavailability of one or both Control Room Ventilation subsystems has no significant impact on CDF or LERF, irrespective of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the Control Room Ventilation system (i.e., the frequency with which the system is expected to be challenged to provide a radiologically-controlled environment in the main control room following a DBA which leads to core damage and leaks of radiation from the containment that can reach the control room) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as large early release.

Section 5.1 of Reference 5 summarizes the NRC staff's risk basis for approval of TR Section 4.5.2.14 and LCO 3.7.3, "Control Room Fresh Air (CRFA) System." (Note: The Control Room Ventilation System at CPS serves a similar design purpose as the CRFA described in STS (BWR 6) LCO 3.7.3). Staying in Mode 3 instead of going to Mode 4 to repair the Control Room Ventilation (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 of Reference 5 makes a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing inoperable Control Room Ventilation system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Actions B.1 and F1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.12 LCO 3.7.4: Control Room Air Conditioning (AC) System

The control room AC system provides temperature control for the control room following control room isolation. The control room AC system consists of two independent, redundant subsystems that provide cooling, heating and humidification of re-circulated control room air. Each subsystem consists of heating coils, a humidification boiler, cooling coils, fans, chillers, compressors, ductwork, dampers, and instrumentation and controls to provide for control room temperature control. The control room AC system is designed to provide a controlled environment under both normal and accident conditions.

LCO: Two control room AC subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one control room AC subsystem is inoperable, it must be restored to operable status within 30 days (Required Action A.1). If two control room AC subsystems are inoperable, verify control room area temperature ≤ 86 °F once per 4 hours and restore one control room AC subsystem to operable status within 7 days (Required Actions B.1 & B 2.). If the required actions and associated completion times cannot be met, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: Required Action C.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action C.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: The unavailability of one or both AC subsystems has no significant impact on CDF or LERF, irrespective of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the AC system (i.e., the frequency with which the system is expected to be challenged to provide temperature control for the control room following control room isolation following a DBA which leads to core damage) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as large early release.

Section 5.1 of Reference 5 summarizes the NRC staff's risk argument for approval of TR Section 4.5.2.15 and LCO 3.7.4, "Control Room Air Conditioning (CRAC) System." The argument for staying in Mode 3 instead of going to Mode 4 to repair the CRAC system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 of Reference 5 makes a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable CRAC system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action C.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.13 LCO 3.7.5: Main Condenser Offgas

The offgas from the main condenser normally includes radioactive gases. The gross gamma activity rate is controlled to ensure that accident analysis assumptions are satisfied and that offsite dose limits will not be exceeded during postulated accidents.

LCO: The radioactivity rate of the noble gases measured at the offgas recombiner effluent shall be ≤ 289 mCi/second after decay of 30 minutes.

Condition Requiring Entry into End State: If the radioactivity rate of the noble gases in the main condenser offgas is not within limits (Condition A), the radioactivity rate of the noble gases must be restored to within limits within 72 hours (Required Action A.1). If the required action and associated completion time cannot be met, one of the following must occur:

a. All main steam lines must be isolated within 12 hours (Required Action B.1), or
b. The steam jet air ejector must be isolated within 12 hours (Required Action B.2), or
c. The plant must be placed in Mode 3 within 12 hours (Required Action B.3.1) and in Mode 4 within 36 hours (Required Action B.3.2).

Modification for End State Required Actions: Required Action B.3.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. Required Action B.3.1 is renumbered to Required Action B.3 and a Note is added to the TS Required Action B.3 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: The failure to maintain the gross gamma activity rate of the noble gases in the main condenser offgas (MCOG) within limits has no significant impact on CDF or LERF, irrespective of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the MCOG system (i.e., the frequency with which the system is expected to be challenged to mitigate offsite radiation releases following a DBA) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as large early release.

Section 5.1 of Reference 5 summarizes the NRC staff's risk basis for approval of TR Section 4.5.2.16 and LCO 3.7.5, "Main Condenser Offgas." Staying in Mode 3 instead of going to Mode 4 to repair the MCOG system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 of Reference 5 makes a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable MCOG system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action B.3 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.14 LCO 3.8.1: AC Sources - Operating

The purpose of the AC electrical system is to provide, during all situations, the power required to put and maintain the plant in a safe condition and prevent the release of radioactivity to the environment. The Class 1E electrical power distribution system AC sources consist of the offsite power source (preferred power sources, normal and alternate(s)), and the onsite standby power sources (e.g., diesel generators (DGs)).

CPS meets General Design Criterion 17 of 10 CFR Part 50, Appendix A, thus the design of the AC electrical system provides independence and redundancy. The onsite Class 1E AC distribution system is divided into redundant divisions so that the loss of any one division does not prevent the minimum safety functions from being performed. Each division has connections to two preferred offsite power sources and a single DG or other Class 1E Standby AC power source.

Offsite power is supplied to the unit switchyard from the transmission network by two transmission lines. From the switchyard, two electrically and physically separated circuits provide AC power through a stepdown transformer to the 4.16-kV emergency buses. In the event of a loss of offsite power, the emergency electrical loads are automatically connected to the DGs in sufficient time to provide for a safe reactor shutdown and to mitigate the consequence of a DBA such as a LOCA.

LCO: The following AC electrical power sources shall be OPERABLE in Modes 1, 2, and 3:

a. Two qualified circuits between the offsite transmission network and the onsite Class1E AC Electric Power Distribution System.

b. Three DGs.

Condition Requiring Entry into End State: Plant operators must bring the plant to Mode 4 within 36 hours following the sustained inoperability of either or both required offsite circuits; one or two required DGs; or one required offsite circuit and one required DG.

Modification for End State Required Actions: TS Required Action F.2 is deleted allowing the plant to stay in Mode 3 while completing repairs. The plant will remain in Mode 3 (hot shutdown) (Required Action F.1). A Note is added to the TS Required Action F.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: Entry into any of the conditions for the AC power sources implies that the AC power sources have been degraded and the single-failure protection for the safe shutdown equipment may be ineffective. Consequently, as specified in TS 3.8.1 at present, the plant operators must bring the plant to Mode 4 when the required action is not completed by the specified time for the associated action.

The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and in the Mode 3 end state. Events initiated by the loss of offsite power are dominant contributors to CDF in most BWR PRAs, and the high pressure core cooling systems RCIC and HPCS, function in mitigating these events (Reference 1). The NRC staff's conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4 for inoperable AC power sources. For CPS, going to Mode 4 for one inoperable AC power source would cause loss of high pressure RCIC system and loss of the power conversion system (condenser), and would require activating the RHR system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action for F.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.15 LCO 3.8.4: Direct Current (DC) Sources - Operating

The purpose of the DC power system is to provide a reliable source of DC power for both normal and abnormal conditions. It must supply power in an emergency for an adequate length of time until normal supplies can be restored.

LCO: For Modes 1, 2 and 3, Division 1, Division 2, Division 3, and Division 4 DC electrical power subsystems shall be OPERABLE.

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours and Mode 4 within 36 hours following the sustained inoperability of one, Division 1 or 2, DC electrical power subsystem for a period of 2 hours. Conditions A, B, and C are stated in TS.

Modification for End State Required Actions: The TS change is to remove the requirement to place the plant in Mode 4 for Condition A, B, or C not met. The change adds a new Condition D, and renumbers initial Conditions D and E to Conditions E and F without changing the Required Action End State. A Note is added to the TS Required Action D.1 stating that LCO 3.0.4 (a) is not applicable when entering Mode 3.

Assessment: If one of the DC electrical power subsystems is inoperable, the remaining DC electrical power subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and in the Mode 3 end state, with one DC system inoperable. Events initiated by the loss of offsite power are dominant contributors to core damage frequency in most BWR PRAs, and the high pressure core cooling systems, RCIC and HPCS, function in mitigating these events. The NRC staff's conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4. Going to Mode 4 for one inoperable DC power source would cause loss of the RCIC system, and loss of the power conversion system, and would require activating the RHR system.

Based on the low probability of loss of the DC power and the number of systems available in Mode 3, the NRC staff concludes in the SE to the BWR topical report that the risk of staying in Mode 3 are approximately the same or lower than the risk of going to the Mode 4 end state.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action for D.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.16 LCO 3.8.7: Inverters - Operating

In Modes 1, 2, and 3, the inverters provide the preferred source of power for the 120-VAC vital buses which power the RPS and the ECCS initiation. The inverter can be powered from an internal AC source/rectifier or from the station battery.

LCO: For Modes 1, 2, and 3, Divisions 1, 2, 3 and 4 inverters, and A and B RPS solenoid bus inverters shall be OPERABLE.

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours and Mode 4 within 36 hours following the sustained inoperability of the required inverter for a period of 7 days.

Modification for End State Required Actions: The proposed TS change is to remove the requirement to place the plant in Mode 4 for Condition A not met. The change adds new Condition B, and renumbers initial Conditions B, C, D and E to Conditions C, D, E and F without changing the Required Action End State. A Note is added to the TS Required Action B.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

Assessment: If one of the inverters is inoperable, the remaining inverters have the capacity to support a safe shutdown and to mitigate an accident condition. The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and in the proposed Mode 3 end state, with an inoperable Inverter. Events initiated by the loss of offsite power are dominant contributors to CDF in most BWR PRAs, and the high pressure core cooling systems, RCIC and HPCS, function in mitigating these events. The NRC staff's conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4. For CPS, going to Mode 4 for one inoperable Inverter power source would cause loss of the high-pressure RCIC system, and loss of the power conversion system (condenser), and would require activating the RHR system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action B.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.3.17 <u>LCO 3.8.9: Distribution Systems - Operating</u>

The onsite Class 1E AC and DC electrical power distribution system is divided into redundant and independent AC, DC, and AC [AC/DC/AC] vital bus electrical power distribution systems. The primary AC electrical power distribution subsystem for each division consists of a 4.16-kV Engineered Safety Feature (ESF) bus having an offsite source of power as well as a dedicated onsite DG source. The secondary plant distribution subsystems include 480-VAC emergency buses and associated load centers, motor control centers, distribution panels and transformers. The 120-VAC vital buses are arranged in four load groups and normally powered from DC via the inverters. There are two independent 125/250-VDC station service electrical power distribution systems and three independent 125-VDC DG electrical power distribution subsystems that support the necessary power for the ESF functions. Each subsystem consists of a 125-VDC and 250-VDC bus and associated distribution panels.

<u>LCO</u>: For Modes 1, 2, and 3, Division 1, 2, and 3 AC, Division 1, 2, 3 and 4 DC, and Division 1, 2, 3, and 4 uninterruptible AC bus electrical power distribution subsystems shall be OPERABLE.

<u>Condition Requiring Entry into End State</u>: The plant operators must bring the plant to Mode 3 within 12 hours and Mode 4 within 36 hours following the sustained inoperability of one or more Division 1 or 2 AC, DC, or uninterruptible AC bus subsystems for a period of 8 hours, 2 hours and 8 hours, respectively (with a maximum 16-hour Completion Time limit from initial discovery of failure to meet the LCO, to preclude being in the LCO indefinitely).

<u>Modification for End State Required Actions:</u> Required Action D.2 in TS is deleted allowing the plant to stay in Mode 3 while completing repairs. A Note is added to the TS Required Action D.1 stating that LCO 3.0.4.a is not applicable when entering Mode 3.

<u>Assessment</u>: If one of the AC/DC/AC vital subsystems is inoperable, the remaining AC/DC/AC vital subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. The BWROG performed a comparative PRA evaluation (Reference 1) of the core damage risks of operation in the current end state and in the Mode 3 end state, with one of the AC/DC/AC vital subsystems inoperable. Events initiated by the loss of offsite power are dominant contributors to CDF in most BWR PRAs, and the high pressure core cooling systems, RCIC and HPCS, play a major role in mitigating these events. The NRC staff's conclusion described in Reference 5 on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4. For CPS, going to Mode 4 for one inoperable AC/DC/AC

vital subsystem would cause loss of the RCIC system, and loss of the power conversion system, and would require activating the RHR system.

The Note "LCO 3.0.4.a is not applicable" in TS Required Action D.1 prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with this system inoperable.

3.4. Overall Assessment of Proposed Technical changes:

Based upon the above assessments, and because the time spent in Mode 3 to perform the repair on any of the systems described above would be infrequent and limited, and in light of defense-in-depth considerations (discussed above and in Reference 1 and as evaluated by the staff's SE in Reference 5), the changes to the CPS TS described above are considered to be acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements 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 amendment involves 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 adopting TSTF-423, Rev 0, involves no significant hazards considerations, and there has been no public comment on the finding in *Federal Register* Notice 73 FR 8068, February 12, 2008. 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 amendment.

6.0 CONCLUSION

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

7.0 REFERENCES

1. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," December 2002 (ML030170084).

2. Federal Register, Vol. 58, No. 139, p. 39136, "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Plants," July 22, 1993.

3. "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," 10 CFR 50.65.

4. Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," May 2000 (ML003699426).

5. NRC Safety Evaluation for Topical Report NEDC-32988, Revision 2, September 27, 2002. (ADAMS Accession No. ML022700603).

6. NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision 3, July 2000 (ML031500684).

7. TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A" (ML032270250).

8. TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A," September 2005 (ML052700156).

9. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decision Making on Plant Specific Changes to the Licensing Basis," USNRC, July 1998. (ADAMS Accession No. ML003740133).

10. Regulatory Guide 1.177, "An Approach for Pant Specific Risk-Informed Decision Making: Technical Specifications," USNRC, August 1998. (ADAMS Accession No. ML003740176).

Principal Contributors: R. P. Grover
Kristy Bucholtz

Dated: June 26, 2009

June 26, 2009

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: TECHNICAL SPECIFICATION CHANGE TSTF-423, RISK-INFORMED MODIFICATION TO SELECTED REQUIRED ACTION END STATES FOR BWR PLANTS, USING THE CONSOLIDATE LINE ITEM IMPROVEMENT PROCESS (TAC NO. MD5859)

Dear Mr. Pardee:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 187 to Facility Operating License No. NPF-62 for the Clinton Power Station (CPS), Unit No. 1. The amendment is in response to your application dated June 21, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071770423), as supplemented by letter dated January 30, 2009 (ADAMS Accession No. ML090350151). AmerGen Energy Company (previous licensee), now Exelon Generation Company, submitted a license amendment request (LAR) regarding the CPS, Unit 1, to the Nuclear Regulatory Commission (NRC). The proposed amendment would modify the technical specifications to risk-informed requirements regarding required action end states. In the LAR, CPS proposes to adopt Technical Specification Task Force (TSTF)-423, Revision 0 (Reference 7), to the Boiling-Water Reactor (BWR) Standard Technical Specifications (STS) (NUREG 1434), which incorporates the BWR Owners Group approved Topical Report NEDC-32988-A, Revision 2, "Technical Justification to Support Risk Informed Modification to Selected Required Action End States for BWR Plants" into the BWR STS. This operating license improvement was made available by the NRC on March 23, 2006 (71 FR 14726), as part of the consolidated line item improvement process.

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

Sincerely,
/RA by MDavid for/
Stephen P. Sands, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosures:
1. Amendment No. 187 to NPF-62
2. Safety Evaluation

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