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

July 7, 2014

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 - ISSUANCE OF AMENDMENTS RE: TECHNICAL SPECIFICATION TASK FORCE TRAVELER (TSTF) 432, "CHANGE IN TECHNICAL SPECIFICATIONS END STATES (WCAP-16294 (TAC NOS. MF1898 AND MF1899)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 275 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2 and Amendment No. 252 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated May 23, 2013, as supplemented by letter dated October 11, 2013.

The amendments revise the TSs to risk-inform requirements regarding selected Required Action End States. Specifically, the changes permit an end state of Mode 4 rather than an end state of Mode 5 consistent with Technical Specification Task Force (TSTF) Traveler TSTF 432-A, Revision 1, "Change in Technical Specifications End States WCAP-16294."

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

Sincerely,

Douglas V Pickett

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosures:
1. Amendment No. 275 to DPR-26
2. Amendment No. 252 to DPR-64
3. Safety Evaluation

cc w/encls: Distribution via Listserv

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

ENTERGY NUCLEAR INDIAN POINT 2, LLC

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-247

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

AND TECHNICAL SPECIFICATIONS

Amendment No. 275
License No. DPR-26

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

   A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated May 23, 2013, as supplemented on October 11, 2013, 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. DPR-26 is hereby amended to read as follows:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A, B and C, as revised through Amendment No. 275, are hereby incorporated in the license. ENO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Benjamin G. Beasley

Benjamin G. Beasley, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: July 7, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 275

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Replace the following page of the License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page	Insert Page
3	3

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

Remove Pages	Insert Pages
3.3.2-1	3.3.2-1
3.3.2-2	3.3.2-2
3.3.7-1	3.3.7-1
3.4.13-1	3.4.13-1
3.4.14-2	3.4.14-2
3.4-15-3	3.4.15-3
3.5.3-1	3.5.3-1
3.5.4-1	3.5.4-1
3.6.6-1	3.6.6-1
3.6.6-2	3.6.6-2
3.6.7-1	3.6.7-1
3.7.7-1	3.7.7-1
3.7.8-2	3.7.8-2
3.7.9-1	3.7.9-1
3.7.10-1	3.7.10-1
3.8.1-4	3.8.1-4
3.8.4-2	3.8.4-2
3.8.7-1	3.8.7-1
3.8.9-2	3.8.9-2

instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) ENO 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; Amdt. 42 10-17-78

(5) ENO pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility and Indian Point Nuclear Generating Unit No. 3 (IP3). Amdt. 220 09-06-01

C. This amended license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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

ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 3216 megawatts thermal. Amdt. 241 10-27-2004

(2) Technical Specifications

The Technical Specifications contained in Appendices A, B, and C, as revised through Amendment No. 275, are hereby incorporated in the license. ENO shall operate the facility in accordance with the Technical Specifications.

(3) The following conditions relate to the amendment approving the conversion to Improved Standard Technical Specifications:

1. This amendment authorizes the relocation of certain Technical Specification requirements and detailed information to licensee-controlled documents as described in Table R, "Relocated Technical Specifications from the CTS," and Table LA, "Removed Details and Less Restrictive Administrative Changes to the CTS" attached to the NRC staff's Safety Evaluation enclosed with this amendment. The relocation of requirements and detailed information shall be completed on or before the implementation of this amendment.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel or train inoperable.	B.1 Restore channel or train to OPERABLE status.	48 hours
	<u>OR</u>	
	B.2.1 Be in MODE 3.	54 hours
	<u>AND</u>	
	--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------	
	B.2.2 Be in MODE 4.	60 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	----- **- NOTE -** One train may be bypassed for up to 8 hours for surveillance testing provided the other train is OPERABLE. -----	
	C.1 Restore train to OPERABLE status.	24 hours
	OR	
	C.2.1 Be in MODE 3.	30 hours
	AND	
	--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	C.2.2 Be in MODE 4.	36 hours
D. One channel inoperable.	----- **- NOTE -** One channel may be bypassed for up to 12 hours for surveillance testing. -----	
	D.1 Place channel in trip.	72 hours
	OR	
	D.2.1 Be in MODE 3.	78 hours
	AND	
	D.2.2 Be in MODE 4.	84 hours

3.3 INSTRUMENTATION

3.3.7 Control Room Ventilation System (CRVS) Actuation Instrumentation

LCO 3.3.7 The CRVS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4,
During movement of recently irradiated fuel assemblies.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. **- NOTE -** Only applicable in MODE 1, 2, 3 or 4. One or more Functions inoperable.	A.1 Place one CRVS train in pressurization mode.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1 Be in MODE 3. <u>AND</u> **NOTE** LCO 3.0.4.a is not applicable when entering MODE 4. B.2 Be in MODE 4.	6 hours 12 hours
C. **- NOTE -** Only applicable during movement of recently irradiated fuel assemblies. One or more Functions inoperable.	C.1 Suspend movement of recently irradiated fuel assemblies.	Immediately

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE,

b. 1 gpm unidentified LEAKAGE,

c. 10 gpm identified LEAKAGE, and

d. 150 gallons per day primary to secondary LEAKAGE through any one steam generator (SG).

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1	Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 AND	Be in MODE 3. --------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	6 hours
	B.2	Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.2	Restore RCS PIV to within limits.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
		--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	B.2	Be in MODE 4.	12 hours
C. One or both RCS boundary valves 730 and 731 not closed and de-energized.	C.1	Verify RCS boundary valves 730 and 731 are closed and de-energized.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, C or D not met.	E.1 Be in MODE 3. AND --------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------- E.2 Be in MODE 4.	6 hours 12 hours
F. All required monitors inoperable.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.15.2	Perform CHANNEL CHECK of the required sump monitor.	12 hours
SR 3.4.15.3	Perform CHANNEL CHECK of the required containment fan cooler condensate flow rate monitor.	12 hours
SR 3.4.15.4	Perform COT of the required sump discharge flow monitor.	31 days
SR 3.4.15.5	Perform COT of the required containment atmosphere radioactivity monitor.	31 days
SR 3.4.15.6	Perform CHANNEL CALIBRATION of the required containment sump monitor.	24 months
SR 3.4.15.7	Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	24 months
SR 3.4.15.8	Perform CHANNEL CALIBRATION of the required containment FCU condensate flow rate monitor.	24 months

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS - Shutdown

LCO 3.5.3 Two ECCS High Head Safety Injection (HHSI) subsystems and one ECCS Residual Heat Removal (RHR) subsystem shall be OPERABLE.

- NOTE -
An RHR subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned to the ECCS mode of operation.

APPLICABILITY: MODE 4.

ACTIONS

- NOTE -
LCO 3.0.4.b is not applicable to ECCS High Head Safety Injection subsystems.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required ECCS subsystem inoperable.	A.1 --------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ---------------------------------- Initiate action to restore required ECCS subsystem to OPERABLE status.	Immediately

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST shall be OPERABLE.

- **NOTE** -
The RWST isolation valves 350, 727A and 845 connected to non-safety related piping may be opened under administrative controls for up to 30 days per fuel cycle for filtration until the end of refuel outage 22.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RWST boron concentration not within limits. OR RWST borated water temperature not within limits.	A.1	Restore RWST to OPERABLE status.	8 hours
B. One of the two required channels of the RWST level low low alarm inoperable.	B.1	Restore RWST level low low alarm to OPERABLE status.	7 days
C. RWST inoperable for reasons other than Condition A or B.	C.1	Restore RWST to OPERABLE status.	1 hour
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
	AND		
		--------- **NOTE** -------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	D.2	Be in MODE 4.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System and Containment Fan Cooler Unit (FCU) System

LCO 3.6.6 Two trains of containment spray and three trains of FCUs shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One containment spray train inoperable.	A.1	Restore containment spray train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
		--------- **NOTE** -------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------	
	B.2	Be in MODE 4.	54 hours
C. One containment FCU train inoperable.	C.1	Restore containment FCU train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
D. Two containment FCU trains inoperable.	D.1	Restore one containment FCU train to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Be in MODE 3.	6 hours
	AND		
		--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	E.2	Be in MODE 4.	12 hours
F. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2	Operate each containment FCU fan unit for $\geq$ 15 minutes.	31 days
SR 3.6.6.3	Verify each containment FCU cooling water flow rate is $\geq$ 1600 gpm.	92 days
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.7 Recirculation pH Control System

LCO 3.6.7 The Recirculation pH Control System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Recirculation pH Control System inoperable.	A.1 Restore Recirculation pH Control System to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND --------- **NOTE** --------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------- B.2 Be in MODE 4.	6 hours 54 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.7.1	Perform a visual inspection of the four sodium tetraborate storage baskets to verify each of the following: a. Each storage basket is in place and intact; and, b. Collectively contain ≥ 8096 pounds (160 cubic feet) of sodium tetraborate decahydrate, or equivalent.	24 months

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW train inoperable.	A.1 ---------------------------------- **- NOTE -** Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW. ---------------------------------- Restore CCW train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------	
	B.2 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, C or D not met.	E.1 Be in MODE 3. AND --------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------- E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	----------------------------------- **- NOTE -** Isolation of SWS flow to individual components does not render the SWS header inoperable. ----------------------------------- Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	92 days
SR 3.7.8.2	Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.8.3	Verify each essential SWS pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. UHS inoperable.	A.1	Be in MODE 3.	7 hours
	<u>AND</u>	--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	A.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify water temperature of UHS is ≤ 95°F.	24 hours

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation System (CRVS)

LCO 3.7.10 Two CRVS trains shall be OPERABLE.

- NOTE -

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

APPLICABILITY: MODES 1, 2, 3 and 4,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable for reasons other than Condition B.	A.1 Restore CRVS train to OPERABLE status.	7 days
B. One or more CRVS trains inoperable due to inoperable CRE boundary in Mode 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u>	
	B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u>	
	B.3 Restore CRE boundary to OPERABLE status.	90 days
C. Two CRVS trains inoperable for reasons other than Condition B.	C.1 Restore CRVS to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A, B or C not met in Mode 1, 2, 3, or 4.	D.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	--------- **NOTE** -------------- LCO 3.0.4.a is not applicable when entering MODE 4. --------------------------------	
	D.2 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One offsite circuit inoperable. AND One DG inoperable.		- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no offsite or DG AC power source automatically available to any train.	
	D.1	Restore offsite circuit to OPERABLE status.	12 hours
	OR		
	D.2	Restore DG to OPERABLE status.	12 hours
E. Two or more DGs inoperable.	E.1	Restore at least two DGs to OPERABLE status.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D or E not met.	F.1	Be in MODE 3.	6 hours
	AND		
		NOTE LCO 3.0.4.a is not applicable when entering MODE 4.	
	F.2	Be in MODE 4.	12 hours
G. One or more offsite circuits and two or more DGs inoperable.	G.1	Enter LCO 3.0.3.	Immediately
H. Two offsite circuits and one or more DGs inoperable.	H.1	Enter LCO 3.0.3.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DC electrical power subsystem inoperable for reasons other than Condition A. AND Not in Condition A for any other battery charger.	B.1.1	Verify that associated DC control power is supplied from an OPERABLE DC electrical power subsystem.	2 hours
	OR		
	B.1.2	Verify by administrative means that associated DC control power autotransfer switch is OPERABLE.	2 hours
	AND		
	B.2	Verify that inverters associated with all other DC electrical power subsystems are OPERABLE.	2 hours
	AND		
	B.3	Restore DC electrical power subsystem to OPERABLE status.	24 hours
C. Required Action and Associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
		--------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------	
	C.2	Be in MODE 4.	12 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

LCO 3.8.7 Four inverters shall be OPERABLE.

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

ACTIONS

- NOTE -

Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any 118 VAC instrument bus de-energized.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One inverter inoperable.	A.1	**- NOTE -** Only applicable to feature(s) that require power to perform the required safety function. --- Declare required feature(s) supported by associated inverter inoperable when the required redundant feature(s) is inoperable.	2 hours from discovery of Condition A concurrent with inoperability of redundant required feature(s)
	<u>AND</u>		
	A.2	Restore inverter to OPERABLE status.	24 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
		--------- **NOTE** --------- LCO 3.0.4.a is not applicable when entering MODE 4. ---------	
	B.2	Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more DC electrical power distribution subsystems inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. <u>AND</u> --------- **NOTE** --------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------- D.2 Be in MODE 4.	6 hours 12 hours
E. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required AC, DC, and 118 VAC instrument bus electrical power distribution subsystems.	7 days

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

ENTERGY NUCLEAR INDIAN POINT 3, LLC

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

AND TECHNICAL SPECIFICATIONS

Amendment No. 252
License No. DPR-64

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

   A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated May 23, 2013, as supplemented on October 11, 2013, 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. DPR-64 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A, B and C, as revised through Amendment No. 252, are hereby incorporated in the license. ENO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Benjamin G. Beasley

Benjamin G. Beasley, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: July 7, 2014

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DOCKET NO. 50-286

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Remove Page	Insert Page
3	3

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

Remove Pages	Insert Pages
3.3.2-1	3.3.2-1
3.3.2-2	3.3.2-2
3.3.7-1	3.3.7-1
3.4.13-1	3.4.13-1
3.4.14-2	3.4.14-2
3.4.15-3	3.4.15-3
3.5.3-1	3.5.3-1
3.5.4-1	3.5.4-1
3.6.6-1	3.6.6-1
3.6.6-2	3.6.6-2
3.6.7-1	3.6.7-1
3.7.8-1	3.7.8-1
3.7.9-2	3.7.9-2
3.7.10-1	3.7.10-1
3.7.11-2	3.7.11-2
3.7.12-1	3.7.12-1
3.8.1-5	3.8.1-5
3.8.4-1	3.8.4-1
3.8.7-2	3.8.7-2
3.8.9-2	3.8.9-2

(4) ENO 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; Amdt. 203 11/27/00

(5) ENO pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility. Amdt. 203 11/27/00

C. This amended license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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

ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 3216 megawatts thermal (100% of rated power).

(2) Technical Specifications

The Technical Specifications contained in Appendices A, B, and C, as revised through Amendment No. 252 are hereby incorporated in the License. ENO shall operate the facility in accordance with the Technical Specifications.

(3) (DELETED) Amdt. 205 2-27-01

(4) (DELETED) Amdt. 205 2-27-01

D. (DELETED) Amdt.46 2-16-83

E. (DELETED) Amdt.37 5-14-81

F. This amended license is also subject to appropriate conditions by the New York State Department of Environmental Conservation in its letter of May 2, 1975, to Consolidated Edison Company of New York, Inc., granting a Section 401 certification under the Federal Water Pollution Control Act Amendments of 1972.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel or train inoperable.	B.1 Restore channel or train to OPERABLE status.	48 hours
	OR	
	B.2.1 Be in MODE 3.	54 hours
	AND ----- NOTE -------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------	
	B.2.2 Be in MODE 4.	60 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	C.1 ------NOTE---------- One train may be bypassed for up to 8 hours for surveillance testing provided the other train is OPERABLE. -------------------- Restore train to OPERABLE status.	 6 hours
	OR	
	C.2.1 Be in MODE 3.	12 hours
	AND ----- NOTE -------- LCO 3.0.4.a is not applicable when entering MODE 4. --------------------	
	C.2.2 Be in MODE 4.	18 hours
D. One channel inoperable.	D.1 ---------NOTE---------- The inoperable channel may be bypassed for up to 8 hours for surveillance testing of other channels. ------------------------ Place channel in trip.	 6 hours
	OR	
	D.2.1 Be in MODE 3.	12 hours
	AND	
	D.2.2 Be in MODE 4.	18 hours

(continued)

3.3 INSTRUMENTATION

3.3.7 Control Room Ventilation System (CRVS) Actuation Instrumentation

LCO 3.3.7 The CRVS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1 Place CRVS in CRVS Mode 3.	7 days
B. One or more Functions with two channels or two trains inoperable.	B.1.1 Place CRVS in CRVS Mode 3.	72 hours
C. Required Action and associated Completion Time for Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> ----- NOTE -------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------- C.2 Be in MODE 4.	6 hours 12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

d. 150 gallons per day primary to secondary LEAKAGE through any one steam generator (SG).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 Be in MODE 3. <u>AND</u> ----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------ B.2 Be in MODE 4.	6 hours 12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	4 hours
	AND	
	A.2.1 Isolate the high pressure portion of the affected system from the low-pressure portion by use of a second closed manual, deactivated automatic, or check valve.	72 hours
	OR	
	A.2.2 Restore RCS PIV to within limits.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1 Be in MODE 3.	6 hours
	AND	
	----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------	
	B.2 Be in MODE 4.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required containment atmosphere radioactivity monitor inoperable. AND Required containment fan cooler unit condensate measuring system inoperable.	D.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status. OR D.2 Restore required containment fan cooler unit condensate measuring system to OPERABLE status.	30 days 30 days
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. AND ----- NOTE ----- LCO 3.0.4.a is not applicable when entering MODE 4. ---------------- E.2 Be in MODE 4.	6 hours 12 hours
F. All required monitors inoperable.	F.1 Enter LCO 3.0.3.	Immediately

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS-Shutdown

LCO 3.5.3 Two ECCS High Head Safety Injection (HHSI) subsystems and one ECCS Residual Heat Removal (RHR) subsystem shall be OPERABLE.

------------------------------NOTE------------------------
An RHR subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned to the ECCS mode of operation.

APPLICABILITY: MODE 4.

ACTIONS

------------------------------NOTE------------------------
LCO 3.0.4.b is not applicable to the ECCS High Head Safety Injection subsystems.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required ECCS Subsystem inoperable.	A.1 ----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------ Initiate action to restore required ECCS subsystem to OPERABLE status.	Immediately

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST and two channels of RWST low level alarm shall be OPERABLE.

....

NOTE 1
The RWST isolation valves connected to non-safety related piping may be opened under administrative controls for up to 14 days per fuel cycle for filtration until the end of refuel outage 18.

....

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RWST boron concentration not within limits of SR 3.5.4.3. OR RWST borated water temperature not within limits of SR 3.5.4.1.	A.1	Restore RWST to OPERABLE status.	8 hours
B. One channel of RWST low level alarm inoperable.	B.1	Restore RWST low level alarm to OPERABLE status.	7 days
C. RWST inoperable for reasons other than Condition A or B.	C.1	Restore RWST to OPERABLE status.	1 hour
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
	AND		
		----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------	
	D.2	Be in MODE 4.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System and Containment Fan Cooler System

LCO 3.6.6 Two Containment Spray trains and three Containment Fan Cooler trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One containment spray train inoperable.	A.1	Restore containment spray train to OPERABLE status.	72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>	----- NOTE ----- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------	
	B.2	Be in MODE 4.	54 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One containment fan cooler train inoperable.	C.1	Restore containment fan cooler train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
D. Two containment fan cooler trains inoperable.	D.1	Restore one containment fan cooler train to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Be in MODE 3.	6 hours
	AND		
		----- NOTE ----- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------	
	E.2	Be in MODE 4.	12 hours
F. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	F.1	Enter LCO 3.0.3.	Immediately

3.6 CONTAINMENT SYSTEMS

3.6.7 Recirculation pH Control System

LCO 3.6.7 The Recirculation pH Control System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Recirculation pH Control System inoperable.	A.1	Restore Recirculation pH Control System to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
		----- NOTE ----- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------	
	B.2	Be in MODE 4.	54 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.7.1 Perform a visual inspection of eight sodium tetraborate storage baskets to verify each of the following: a. Each storage basket is in place and intact; and, b. Collectively contain $\geq$ 8096 pounds (160 cubic feet) of sodium tetraborate decahydrate, or equivalent.	24 Months

3.7 PLANT SYSTEMS

3.7.8 Component Cooling Water (CCW) System

LCO 3.7.8 Two CCW loops shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CCW loop inoperable.	A.1	-------NOTE------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," for residual heat removal loops made inoperable by CCW. ------------------ Restore CCW loop to OPERABLE status.	 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------ Be in MODE 4.	 12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One EDG ESFAS Service Water valve inoperable.	C.1	Restore both EDG ESFAS Service Water valves to OPERABLE status.	12 hours
D. One FCU ESFAS Service Water valve inoperable.	D.1	Restore both FCU ESFAS Service Water valves to OPERABLE status.	12 hours
E. SWS piping and valves inoperable for reasons other than Conditions A, B, C, or D, with no loss of safety function.	E.1	Restore SWS to OPERABLE Status	12 hours
F. Required Action and associated Completion Time of Condition A, B, C, D or E not met.	F.1	Be in MODE 3	6 hours
	<u>AND</u>		
		----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------	
	F.2	Be in MODE 4.	12 hours

3.7 PLANT SYSTEMS

3.7.10 Ultimate Heat Sink (UHS)

LCO 3.7.10 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. UHS temperature > 95°F. OR UHS inoperable for reasons other than temperature > 95°F.	A.1 Be in MODE 3. AND ----- NOTE -------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------- A.2 Be in MODE 4.	7 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Verify average water temperature of UHS is ≤ 95°F.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B or C not met in Mode 1, 2, 3, or 4.	D.1 Be in MODE 3. AND ----- NOTE ------ LCO 3.0.4.a is not applicable when entering MODE 4. ------------------ D.2 Be in MODE 4.	6 hours 12 hours
E. One CRVS train inoperable during movement of recently irradiated fuel assemblies.	E.1 Place OPERABLE CRVS train in pressurization mode. OR E.2 Suspend movement of recently irradiated fuel assemblies.	Immediately Immediately
F. Two CRVS trains inoperable during movement of recently irradiated fuel assemblies. OR One or more CRVS trains inoperable due to an inoperable CRE boundary during movement of recently irradiated fuel assemblies.	F.1 Suspend movement of recently irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CRVS train for ≥ 15 minutes.	31 days
SR 3.7.11.2	Perform required CRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.11.3	Verify each CRVS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.12 Control Room Air Conditioning System (CRACS)

LCO 3.7.12 Two CRACS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4,

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRACS train inoperable.	A.1 Restore CRACS train to OPERABLE status.	30 days
B. Two CRACS trains inoperable.	B.1 Restore one CRACS train to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------	
	C.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.12.1 Verify each CRACS train has the capability to remove the assumed heat load.	24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two or more DGs inoperable.	E.1 Restore at least two DGs to OPERABLE status.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND --- NOTE ---- LCO 3.0.4.a is not applicable when entering MODE 4. ------------- F.2 Be in MODE 4.	6 hours 12 hours
G. One or more offsite circuits and two DGs inoperable.	G.1 Enter LCO 3.0.3.	Immediately
H. Two offsite circuits and one or more DGs inoperable.	H.1 Enter LCO 3.0.3.	Immediately

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.4 The following four DC electrical power subsystems shall be OPERABLE:

Battery 31 and associated Battery Charger;
Battery 32 and associated Battery Charger;
Battery 33 and associated Battery Charger; and
Battery 34.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DC electrical power subsystem 34 Inoperable.	A.1 Declare Inverter 34 inoperable and take Required Actions specified in LCO 3.8.7, Inverters-Operating.	2 hours
B. One DC electrical power subsystem (31 or 32 or 33) inoperable.	B.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
C. Required Action and Associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	AND	
	--- NOTE ---- LCO 3.0.4.a is not applicable when entering MODE 4. -------------	
	C.2 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One inverter inoperable.	C.1 ----NOTE--------- Only applicable to feature(s) that require power to perform the required safety function. ------------------ Declare required feature(s) supported by associated inverter inoperable when the required redundant feature(s) is inoperable.	 2 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	AND	
	C.2 Restore inverter to OPERABLE status.	7 days
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours
	AND	
	----- NOTE -- LCO 3.0.4.a is not applicable when entering MODE 4. ------------- D.2 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One DC electrical power distribution subsystem inoperable with no loss of safety function.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND ----- NOTE ------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------- D.2 Be in MODE 4.	6 hours 12 hours
E. One or more trains with inoperable distribution subsystems that result in a loss of safety function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.9.1 Verify correct breaker alignments and voltage to required AC, DC, and VIB electrical power distribution subsystems.	7 days

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 275 TO FACILITY OPERATING LICENSE NO. DPR-26

AND AMENDMENT NO. 252 TO FACILITY OPERATING LICENSE NO. DPR-64

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3

DOCKET NOS. 50-247 AND 50-286

1.0 INTRODUCTION

By letter dated May 23, 2013, (Agencywide Documents and Access Management System (ADAMS) Accession No. ML13157A108), as supplemented by letter dated October 11, 2013, (ADAMS Accession No. ML13294A092), Entergy Nuclear Operations, Inc., the licensee, proposed changes to the Technical Specifications (TSs) for Indian Point Nuclear Generating Unit Nos. 2 (IP2) and 3 (IP3). The proposed amendments would modify technical specifications to risk-inform requirements regarding selected required action end states. Specifically, the licensee proposed to adopt U.S. Nuclear Regulatory Commission (NRC) approved Revision 1 to Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-432, "Change in Technical Specifications End States (WCAP-16294)," dated November 29, 2010 (TSTF-432, Reference 1).

The supplemental letter provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

The following explains the applicability of General Design Criteria (GDC) for IP2 and IP3. The construction permits for IP2 and IP3 were issued by the Atomic Energy Commission (AEC) on October 14, 1966 and August 13, 1969, and the operating licenses were issued on September 28, 1973, and December 12, 1975. The plant GDC are discussed in the Updated Final Safety Analysis Report (UFSAR) Chapter 1.3, "General Design Criteria," with more details given in the applicable UFSAR sections. The AEC published the final rule that added Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," in the *Federal Register* (36 FR 3255) on February 20, 1971, with the rule effective on May 21, 1971. In accordance with an NRC staff requirements memorandum from S. J. Chilk to J. M. Taylor, "SECY-92-223 - Resolution of Deviations Identified During the Systematic Evaluation Program," dated September 18, 1992 (ADAMS Accession No. ML003763736), the Commission decided not to apply the Appendix A GDC to plants with construction permits issued prior to May 21, 1971. Therefore, the GDC which constitute the licensing bases for IP2 and IP3 are those in the UFSARs.

As discussed in the UFSARs, the licensees for IP2 and IP3 have made some changes to the facilities over the life of the units that committed to some of the GDCs from 10 CFR Part 50, Appendix A. The extent to which the Appendix A GDC have been invoked can be found in specific sections of the UFSARs and in other IP2 and IP3 licensing basis documentation, such as license amendments.

The Commission's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36, "Technical Specifications." Pursuant to 10 CFR 50.36(c) the TSs are required to include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCOs); (3) surveillance requirements; (4) design features; and (5) administrative controls. The regulation at 10 CFR 50.36(c)(2) states: "When [an LCO] of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

The regulation at 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," requires that the reactor must be provided with an Emergency Core Cooling System (ECCS) that must be designed so that its calculated cooling performance following postulated loss-of-coolant accidents (LOCAs) conforms to the criteria set forth in 10 CFR 50.46(b).

Most of today's TSs 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 the potential significance of events occurring during shutdown conditions, and guidance was issued to improve shutdown operation. Since enactment of a shutdown rule was expected, almost all TS changes involving power operation, including a revised end state requirement, were postponed (for example see the Final Policy Statement on TS Improvements, Reference 3). 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.

The regulation at 10 CFR 50.65(a)(4) requires that "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 (SSCs) that a risk-informed evaluation process has shown to be significant to public health and safety." Regulatory Guide (RG) 1.182, "Assessing and Managing Risk before Maintenance Activities at Nuclear Power Plants" (Reference 6), provides guidance on implementing the provisions of 10 CFR 50.65(a)(4) by endorsing a revised Section 11 to NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (Reference 7).

Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 "Domestic Licensing of Production and Utilization Facilities," provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for SSCs important to safety.

- Criterion 38, "Containment Heat Removal," requires the establishment of a containment heat removal system that, consistent with the functioning of other associated systems, will rapidly reduce containment pressure and temperature following any LOCA and maintain them at acceptably low levels. The containment heat removal system supports the containment function by minimizing the duration and intensity of the pressure and temperature increase following a LOCA thus lessening the challenge to containment integrity. Meeting Criterion 38 will help ensure that the containment can fulfill its role as the final barrier against the release of radioactivity to the environment.

- Criterion 41, "Containment Atmosphere Cleanup," requires that systems to control fission products, hydrogen, oxygen, and other substances which may be released into the reactor containment shall be provided as necessary to reduce, consistent with the functioning of other associated systems, the concentration and quality of fission products released to the environment following postulated accidents, and to control the concentration of hydrogen or oxygen and other substances in the containment atmosphere following postulated accidents to assure that containment integrity is maintained.

Regarding IP2 and IP3 plant–specific GDCs equivalent to Criterion 38 and Criterion 41 specified above, IP2 FSAR, Revision 23 (2012), Section 1.3.7, "Engineered Safety Features (GDC 37 - GDC 65)," and IP3 Final Safety Analysis Report (FSAR), Revision 4 (2011),Section 1.3, "General Design Criteria," discuss plant specific design and systems required for containment heat removal and containment atmosphere cleanup. The FSAR Sections list specific systems, structures, equipment and components that will reduce containment pressure and temperature following any LOCA, and also state that the containment atmosphere, the plant vent, the containment fan-coolers service water discharge, the waste disposal system liquid effluent, and the component cooling loop are monitored for radioactivity concentration during all normal operations, anticipated transients, and accident conditions. Therefore, the NRC considers that the licensee is in compliance with Criterion 38 and Criterion 41.

RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," (Reference 4) describes a risk-informed approach, acceptable to the NRC, for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. RG 1.174 also provides risk acceptance guidelines for evaluating the results of such evaluations.

RG 1.177. "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," (Reference 5) describes an acceptable risk-informed approach specifically for assessing proposed permanent allowed outage time and Surveillance Test Interval TS changes. RG 1.177 also provides risk acceptance guidelines for evaluating the results of such assessments. RG 1.177 identifies a three-tiered approach for the licensee's evaluation of the risk associated with a proposed completion time (CT) TS change. Per RG 1.177, the improved STS use the terminology "completion times" and "surveillance frequency" in place of "allowed outage time" and "surveillance test interval."

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," of the NRC Standard Review Plan (SRP), NUREG-0800 (Reference 8). Guidance on evaluating probabilistic risk assessment (PRA) technical adequacy related to risk-informed TS changes is provided in SRP Section 16.1, "Risk-Informed Decision Making: Technical Specifications" (Reference 9), which includes CT changes as part of risk-informed decision making.

3.0 TECHNICAL EVALUATION

Traveler TSTF-432 incorporates the Nuclear Energy Institute's (NEI) approved Topical Report (TR) WCAP-16294-NP-A, Revision 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS [nuclear steam supply system] PWRs [pressurized water reactors]" (TR WCAP-16294, Reference 2), into NUREG-1431, "Standard Technical Specifications Westinghouse Plants" (the Westinghouse STS, Reference 3). The licensee stated that its License Amendment Request (LAR) is consistent with the Notice of Availability of TSTF-432 announced in the *Federal Register* on May 11, 2012 (77 FR 27814).

TSTF-432 is one of the industry's initiatives developed under the Risk Management Technical Specifications program. The purpose of risk-informed TS changes is to maintain or improve safety while reducing unnecessary burden and to make TS requirements consistent with the Commission's other risk-informed regulatory requirements.

The Westinghouse STS define the following six operational modes. Of specific relevance to TSTF-432 are Modes 4 and 5:

- Mode 1 - Power operation. The reactor is critical and thermal power is greater than 5 percent of the rated thermal power.

- Mode 2 – Startup. The reactor is critical and thermal power is ≤ 5 percent of the rated thermal power.

- Mode 3 - Hot standby. The reactor is subcritical and the average reactor coolant system (RCS) temperature is ≥ 350 °F.

- Mode 4 - Hot shutdown. The reactor is subcritical and the average RCS temperature is greater than 200 °F and less than 350 °F. The reactor vessel head closure bolts are fully tensioned.

- Mode 5 - Cold shutdown. The reactor is subcritical and the average RCS temperature is less than or equal to 200 °F. The reactor vessel head closure bolts are fully tensioned.

- Mode 6 – Refueling. The reactor in this mode is shut down and one or more reactor vessel head closure bolts are less than fully tensioned.

TR WCAP-16294 identifies and evaluates new TS required action end states for a number of TS LCOs, using a risk-informed approach, consistent with RG 1.174 and RG 1.177. An end state is a condition that the reactor must be placed in if the TS required action(s) cannot be met. The end states are currently defined based on placing the unit into a mode or condition in which the TS LCO is not applicable. Mode 5 is the current end state for LCOs that are applicable in Modes 1 through 4. The risk of the transition from Mode 1 to Modes 4 or 5 depends on the availability of alternating current (AC) sources. During the realignment from Mode 4 to Mode 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in Mode 5 is dependent on AC power for shutdown cooling whereas, in Mode 4, the turbine driven auxiliary feedwater (AFW) pump will be available.

Therefore, transitioning to Mode 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, TR WCAP-16294 justifies Mode 4 as an acceptable alternate end state to Mode 5. The proposed change to the TSs will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The Mode 4 TS end state is applied, and risk is assessed and managed in accordance with 10 CFR Section 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Modified end states are limited to conditions 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.

Proposed Action

As summarized in the following table, the requested TS changes would permit an end state of hot shutdown (Mode 4) rather than an end state of cold shutdown (Mode 5) for the following TS action requirements.

Proposed Changes To End States	
TS Condition	**Title**
3.3.2-B 3.3.2-C	Engineered Safety Feature Actuation System (ESFAS) Instrumentation
3.3.7-B (IP2) 3.3.7-C (IP3)	Control Room Ventilation System (CRVS) Actuation Instrumentation
3.4.13-B	RCS Operational Leakage
3.4.14-B	RCS PIV [Pressure Isolation Valve] Leakage
3.4.15-E	RCS Leakage Detection Instrumentation
3.5.3-A 3.5.3-B 3.5.3-C 3.5.3-D (IP2)	ECCS [emergency core cooling system] – Shutdown
3.5.4-D	Refueling Water Storage Tank (RWST)
3.6.6-B 3.6.6-E	Containment Spray System and Containment Fan Cooler Unit System
3.6.7-B	Recirculation pH Control System
3.7.7-B (IP2) 3.7.8-B (IP3)	Component Cooling Water (CCW) System

Proposed Changes To End States	
TS Condition	**Title**
3.7.8-E (IP2) 3.7.9-F (IP3)	Service Water System (SWS)
3.7.9-A (IP2) 3.7.10-A (IP3)	Ultimate Heat Sink (UHS)
3.7.10-D (IP2) 3.7.11-D (IP3)	Control Room Ventilation System (CRVS)
3.7.12-C (IP3)	Control Room Air Conditioning System (CRACS)
3.8.1-F	AC Sources – Operating
3.8.4-C	DC [direct current] Sources – Operating
3.8.7-B (IP2) 3.8.7-D (IP3)	Inverters – Operating
3.8.9-D	Distribution Systems – Operating

This LAR is limited to inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and the primary purpose is to correct the inoperable component(s) and return to power operation as soon as is practical.

The changes proposed in TSTF-432 are consistent with the changes proposed and justified in TR WCAP-16294, and approved by the NRC in a safety evaluation (SE) on March 29, 2010 (Reference 10). Specifically, end states are prescribed in the TS when Required Actions are not met. The current TS actions require placing the plant in cold shutdown (Mode 5) based on the expectation that this condition would result in the safest condition, since most design-basis accidents (DBAs) and transients either cannot physically occur during shutdown, or would have significantly reduced plant impact and occur much less frequently due to the reduced temperatures and pressures in the plant. Accidents and transients unique to shutdown conditions were anticipated to be of less significance compared to the design bases events applicable to power operation.

The requested change to the TSs is to allow a Mode 4 end state rather than a Mode 5 end state for selected TS LCO actions. TR WCAP-16294 provides a comparative qualitative assessment of the availability of plant equipment for decay heat removal and accident mitigation in Modes 4 and 5, and considers the likelihood and consequences of initiating events, which may occur in these modes. A quantitative risk assessment of operation in these modes, including the risk associated with the transition from Mode 4 to Mode 5 and then back to Mode 4 to support the return to service, is also provided using a shutdown and transition PRA model developed to support the review of TR WCAP-16294.

TR WCAP-16294 concludes that the availability of steam generator (SG) heat removal capability in Mode 4, and the avoidance of transitioning the plant to and from shutdown cooling, makes Mode 4 the preferred end state over Mode 5 for each of the proposed TS conditions being changed. This conclusion is further supported by quantitative risk analyses, which demonstrate a reduction in plant risk by remaining in Mode 4 compared to the alternative of transitioning to and from Mode 5 in accordance with the existing TS requirements.

Both the qualitative and quantitative analyses of TR WCAP-16294 support a Mode 4 end state. This conclusion is primarily due to the availability of SG cooling in Mode 4 via the turbine driven AFW pump which is not reliant upon AC power, compared to the use of shutdown cooling in Mode 5 which requires the availability of AC power. Further, the transition risks associated with establishing shutdown cooling alignments and the resulting potential for loss of inventory or loss of cooling events due to human error during such alignments are avoided by remaining in Mode 4.

This general assessment is applied as the basis for changing the required end state from Mode 5 to Mode 4 for those TSs which govern plant equipment that is not included in the PRA models, supported by qualitative assessments of the plant impact of the unavailability of the TS equipment. For those TS covering plant equipment that is included in the PRA models, a quantitative risk assessment is also provided which assesses the comparative risk of completing repairs in Mode 4 or proceeding to Mode 5 for repairs and then returning to Mode 4 for plant startup, considering the available equipment for accident mitigation.

Changing the required end state to Mode 4 will also result in increased plant availability by decreasing the time of shutdown. The additional time required to transition to Mode 5 from Mode 4 when shutting down and also to Mode 4 from Mode 5 when restarting can be eliminated with the end state change. A typical time for the transition from Mode 4 to Mode 5 during shutdown and from Mode 5 to Mode 4 during startup is 24 hours. Therefore, this change will allow an availability increase of 24 hours.

Changing the end states allows continued operation with the LCO not met, by removing the TS requirement to exit the LCO Applicability. In this case the requirements of LCO 3.0.4.a would apply unless otherwise stated. LCO 3.0.4.a allows entry into a mode or other specified condition in the Applicability with the LCO not met when the associated Actions to be entered permit continued operation in the mode or other specified condition in the Applicability for an unlimited period of time. Compliance with Required Actions that permit continued operation of the unit for an unlimited period of time in a mode or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the mode change. Therefore, in such cases, entry into a mode or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions.

Thus, implementing modified end states requires adding a Note to the affected Required Actions to prevent using the allowance of LCO 3.0.4.a when entering Mode 4 from Mode 5. This is done to avoid unit operation in a condition that should be prohibited by TS since LCO 3.0.4.a allows entry into a mode or other specified condition in the Applicability when the associated Actions to be entered permit continued operation in the mode or other specified condition in the Applicability for an unlimited period of time. Applying the allowance of LCO 3.0.4.a to modified end states was not analyzed in TR WCAP-16294; therefore, an appropriate limitation is applied by the addition of a Note to the affected TS Required Actions.

3.1 Technical Analysis

This section provides the NRC staff evaluation of the impact of each proposed end state change on defense-in-depth and safety margins as applied to the corresponding safety systems. The staff's evaluation approves only the proposed changes to the TSs as described below. The staff finds that the TR WCAP-16294 used realistic assumptions regarding the plant conditions and the availability of various mitigating systems in analyzing the risks and considering the defense-in-depth and safety margins. Thus the staff concludes that the TR WCAP-16294 uses realistic assumptions to justify the change in the end state. However, during the proposed Mode 4 end state, due to the safety injection (SI) signal blockage and non-availability of accumulators, operator actions will be required to mitigate potential events.

During the proposed Mode 4 end state, risk is assessed and managed consistent with 10 CFR 50.65. The NRC staff's review is based on the knowledge of lower RCS pressure in Mode 4, which reduces the severity of a LOCA, and limits any coolant inventory loss in the event of a LOCA.

3.1.1 Proposed Required Actions

The proposed changes add a Note stating that LCO 3.0.4.a is not applicable when entering Mode 4 from Mode 5 to each Required Action listed in the table below. In general, the end state for each Required Action shown in the table below is revised to be in Mode 4 instead of in Mode 5. The following table provides: (1) the TS number and title, (2) which Required Action is being revised, (3) the current end state and the required CT, and (4) the proposed end state and new CT.

Proposed Changes To End States			
TS Number and Title	**TS Required Action(s)**	**Current End State(s) and Completion Time(s)**	**Proposed End State(s) and Completion Time(s)**
3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation Functions: 1.a, 2.a, 3.a(1), and 3.b(1)	B.2.2	Mode 5 in 84 hours	Mode 4 in 60 hours
3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation Functions: 1.b, 2.b, 3.a(2), and 3.b(2)	C.2.2	Mode 5 in 60 hours (IP2) Mode 5 in 42 hours (IP3)	Mode 4 in 36 hours (IP2) Mode 4 in 18 hours (IP3)
3.3.7 Control Room Ventilation System (CRVS) Actuation Instrumentation	B.2 (IP2) C.2 (IP3)	Mode 5 in 36 hours	Mode 4 in 12 hours
3.4.13 RCS Operational Leakage	B.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.4.14 RCS Pressure Isolation Valve Leakage	B.2	Mode 5 in 36 hours	Mode 4 in 12 hours

Proposed Changes To End States			
TS Number and Title	**TS Required Action(s)**	**Current End State(s) and Completion Time(s)**	**Proposed End State(s) and Completion Time(s)**
3.4.15 RCS Leakage Detection Instrumentation	E.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.5.3 ECCS - Shutdown	D.1 (IP2) C.1 (IP3)	Mode 5 in 24 hours	See Note
3.5.4 Refueling Water Storage Tank (RWST)	D.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.6.6 Containment Spray System and Containment Fan Cooler System	B.2 E.2	Mode 5 in 84 hours Mode 5 in 36 hours	Mode 4 in 54 hours Mode 4 in 12 hours
3.6.7 Recirculation pH Control System	B.2	Mode 5 in 84 hours	Mode 4 in 54 hours
3.7.7 (IP2) 3.7.8 (IP3) Component Cooling Water (CCW) System	B.2	Mode 5 in 72 hours (IP2) Mode 5 in 36 hours (IP3)	Mode 4 in 12 hours
3.7.8 (IP2) 3.7.9 (IP3) Service Water System (SWS)	E.2 (IP2) F.2 (IP3)	Mode 5 in 36 hours	Mode 4 in 12 hours
3.7.9 (IP2) 3.7.10 (IP3) Ultimate Heat Sink (UHS)	A.2	Mode 5 in 36 hours (IP2) Mode 5 in 37 hours (IP3)	Mode 4 in 12 hours
3.7.10 (IP2) 3.7.11 (IP3) Control Room Ventilation System (CRVS)	D.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.7.12 (IP3) Control Room Air Conditioning System (CRACS)	C.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.8.1 AC Sources – Operating	F.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.8.4 DC Sources – Operating	C.2	Mode 5 in 36 hours	Mode 4 in 12 hours
3.8.7 Inverters – Operating	B.2 (IP2) D.2 (IP3)	Mode 5 in 36 hours	Mode 4 in 12 hours
3.8.9 Distribution Systems – Operating	D.2	Mode 5 in 36 hours	Mode 4 in 12 hours

Note: In addition, per the licensee's supplement letter, dated October 11, 2013, (ADAMS Accession No. ML13294A092), the licensee proposed to revise IP3 TS 3.5.3, "ECCS – Shutdown," identical to the IP2 TS 3.5.3, i.e., by requiring Two ECCS High Head Safety Injection (HHSI) subsystems and one ECCS Residual Heat Removal (RHR) subsystem OPERABLE, instead of currently required OPERABILITY of one ECCS RHR subsystem and one ECCS recirculation subsystem. Conditions B and C are deleted in IP3 TS and Conditions B, C, and D, are deleted in IP2 TS. This change allows the unit to remain in Mode 4, rather than transitioning to Mode 5 with an inoperable ECCS high head subsystem.

3.1.2 Evaluation of Proposed Changes

A brief description of the systems and components covered by the scope of TSTF-432 and the NRC staff's evaluation of the proposed changes to the TSs are provided in the following paragraphs.

TR WCAP-16294 does not address entry into Mode 4 from Mode 5 when the Required Actions are in effect. Such a mode change would be permissible since the revised actions permit continued operation in Mode 4 for an unlimited period of time, and therefore transitioning from Mode 5 to Mode 4 would be permissible using LCO 3.0.4.a. Since applying LCO 3.0.4.a to modified end states was not analyzed in TR WCAP-16294, an appropriate note is added to each affected Required Action which identifies that the provisions of LCO 3.0.4.a are not applicable to Mode 4 entry from Mode 5.

3.1.2.1 TS 3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

The Engineered Safety Feature Actuation System (ESFAS) instrumentation initiates necessary safety systems, based on the setpoint for selected parameters to protect against violating core design limits and the RCS pressure boundary, and to mitigate accidents. The ESFAS instrumentation functions are listed in Table 3.3.2-1.

Function 1.a Safety Injection - Manual Initiation
Function 1.b Safety Injection - Automatic Actuation Logic and Actuation Relays

Safety Injection (SI) system: The SI system provides two primary functions: (1) primary side water addition to ensure maintenance or recovery of reactor vessel water level (covering the active fuel for heat removal, clad integrity, and for limiting the peak clad temperature to $< 2200°F$), and (2) boration to ensure recovery and maintenance of shutdown margin ($k_{eff} < 1.0$). These functions mitigate the effects of high energy line breaks both inside and outside of containment.

Manual initiation causes actuation of all components in the same manner as any of the automatic actuation signals. The automatic actuation logic and actuation relays must be operable in Mode 4 to support system level manual initiation. The LCO for both manual initiation and automatic actuation logic and actuation relays requires that two trains shall be operable in Modes 1, 2, 3, and 4.

Function 2.a Containment Spray - Manual Initiation
Function 2.b Containment Spray - Automatic Actuation Logic and Actuation Relays

Containment spray system: The containment spray system provides two primary functions: (1) lowers containment pressure and temperature after a high energy line break in containment, and (2) reduces the amount of radioactive iodine in the containment atmosphere. These functions are necessary to ensure the containment structure pressure boundary, and limit the radioactive iodine release to the environment in the event of failure of containment structure.

The operator can initiate containment spray by actuating either of two containment spray actuation pushbuttons in the control room. Simultaneously actuating the two pushbuttons will start both trains of containment spray.

There are two trains for automatic actuation. In Mode 4, adequate time is available to manually actuate required components in the event of a Design Basis Accident (DBA). However, because of the large number of components actuated, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be operable in Mode 4 to support system level manual initiation.

The LCO for both manual initiation and automatic actuation logic and actuation relays requires that two trains shall be operable in Modes 1, 2, 3, and 4.

Function 3.a(1) Containment Isolation - Phase A Isolation - Manual Initiation
Function 3.a(2) Containment Isolation - Phase A Isolation - Automatic Actuation Logic and Actuation Relays

Function 3.b(1) Containment Isolation - Phase B Isolation - Manual Initiation
Function 3.b(2) Containment Isolation - Phase B Isolation - Automatic Actuation Logic and Actuation Relays

Containment Isolation (CI) system: The CI system provides isolation of the containment atmosphere, and selected process systems that penetrate containment, from the environment. This function is necessary to prevent or limit the release of radioactivity to the environment in the event of a large break LOCA.

There are two separate CI signals, Phase A and Phase B. The Phase A signal isolates all automatically isolable process lines exiting containment, except component cooling water (CCW) and reactor coolant pump (RCP) seal return, at a relatively low containment pressure. The Phase A CI is actuated automatically by SI, or manually via the automatic actuation logic. All process lines penetrating containment, with the exception of CCW and RCP seal return, are isolated.

Phase B signal isolates CCW and RCP seal return. Manual Phase B CI is accomplished by the same pushbuttons that actuate containment spray. When the two containment spray pushbuttons are depressed simultaneously, Phase B CI and containment spray will be actuated in both trains.

The LCO for 3.a(1) and 3.b(1) requires that two channels be operable in Modes 1, 2, 3, and 4. The LCO for 3.a(2) and 3.b(2) requires that two trains be operable in Modes 1, 2, 3, and 4.

Evaluation of SI, containment spray, and CI

For Functions 1.a and 1.b, Function 1.a has two channels and Function 1.b has two trains. If one channel or train is inoperable, the other channel or train is available to initiate SI. For Functions 2.a and 2.b, if one train is inoperable, the other train is available for the operator to initiate containment spray. In addition, the containment, CI valves, containment spray system, and CCW system are available and required to be operable in Mode 4. For Functions 3.a(1), 3.a(2), 3.b(1), and 3.b(2), if one channel or train is inoperable, the other channel or train is available to the operator to initiate CI. In addition, the CI valves, containment spray system, and CCW systems are available in Mode 4.

A cool down to Mode 4 leaves the unit in a state in which transients progress slower than at power, backup core cooling is available via RHR, there is increased time for operator actions and mitigation strategies, and there is a lower overall risk than proceeding to Mode 5. Placing the unit in Mode 5 does not increase the instrumentation available for event mitigations; and therefore there is no benefit with regards to monitoring plant status by proceeding to Mode 5. Sufficient defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the staff finds the proposed change to be acceptable.

3.1.2.2 TS 3.3.7 Control Room Ventilation System (CRVS) Actuation Instrumentation

Control Room Ventilation System (CRVS) actuation instrumentation: The CRVS provides an enclosed control room environment from which the unit can be operated following an uncontrolled release of radioactivity. Upon receipt of an actuation signal, the CRVS initiates filtered pressurization of the control room for IP2 and filtered ventilation and pressurization of the control room for IP3.

The CRVS actuation instrumentation consists of control room radiation monitor in the air intake to the control room for IP2 and IP3 and the control building radiation monitor for IP2. A high radiation signal from any of these detectors will initiate both trains of the CRVS. The control room operator can also align and start both CRVS trains manually using the CRVS mode switch. The CRVS is also actuated by a SI signal. The LCO requirements ensure that instrumentation necessary to initiate the CRVS is operable. The LCO for this system requires that three trains and two channels be operable in Modes 1, 2, 3, 4, and during movement of recently irradiated fuel assemblies for IP2 and two trains and two channels be operable in Modes 1, 2, 3, and 4 for IP3.

Evaluation of CRVS

The CRVS design provides redundancy and defense-in-depth from the multiple channels, trains, and functions available to actuate each system. For CRVS, if one or more functions are inoperable, the Required Actions require one train to be placed in the pressurization mode of operation. This accomplishes the actuation instrumentation function and places the unit in a conservative mode of operation.

If the operator is unable to place the system in the pressurization mode, in accordance with the required actions, then the proposed TS would require the plant to be placed in Mode 4 (hot shutdown) instead of the current requirement of Mode 5 (cold shutdown). The likelihood of an initiating event is not increased by placing the unit in Mode 4. Placing the unit in Mode 5 does not increase the instrumentation available for event mitigation; and therefore there is no benefit with regards to monitoring plant status by proceeding to Mode 5. The design of the system maintains sufficient defense-in-depth when the end state is changed from Mode 5 to Mode 4. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the NRC staff finds the proposed change to be acceptable.

3.1.2.3 TS 3.4.13 RCS Operational Leakage

The safety significance of Reactor Coolant System (RCS) operational leakage varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS leakage into the containment area is necessary. A limited amount of leakage inside containment is expected from auxiliary systems that cannot be made 100 percent leak tight. Leakage from these systems should be detected, located, and isolated from the containment atmosphere, if possible, so as not to interfere with RCS leakage detection.

TS LCO 3.4.13 deals with protection of the reactor coolant pressure boundary (RCPB) from degradation and the core from inadequate cooling, in addition to preventing the accident analyses radiation release assumptions from being exceeded.

In Modes 1, 2, 3, and 4, RCS operational leakage shall be limited to:

a. No pressure boundary leakage,

b. 1 gallon per minute (gpm) unidentified leakage,

c. 10 gpm identified leakage, and

d. 150 gallons per day primary to secondary leakage through any one SG.

RCS leakage that is not large enough to be a small-break LOCA should be treated as an event leading to a controlled shutdown which is not modeled in the quantitative risk analysis.

In Mode 4, the RCS pressure is significantly reduced and this reduces leakage. All LOCA mitigating systems with the exception of the accumulators are available and the RHR serves as the backup to AFW for decay heat removal. If RCS operational leakage is not within limits for reasons other than pressure boundary leakage or primary-to-secondary leakage, then the leakage must be reduced to within the limit in 4 hours consistent with Required Action A.1. If operational leakage is not restored to within the limit in 4 hours, in accordance with Required Action A.1, or if pressure boundary leakage exists, or primary-to-secondary leakage is not within the limit, then Required Actions B.1 and B.2 become applicable. The proposed Required Actions B.1 and B.2 require that the unit be placed in Mode 3 within 6 hours and Mode 4 within 12 hours. Thus, the reactor must be brought to lower pressure conditions to reduce the severity of leakage and its potential consequences. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the NRC staff finds the proposed change to revise Required Action B.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.4 TS 3.4.14 RCS Pressure Isolation Valve Leakage

Pressure isolation valves (PIVs) typically consist of two normally closed valves in series within the RCPB that separate the high pressure RCS from an attached low pressure system. The main purpose of this specification is to prevent overpressure failure of the low pressure portions of the connecting systems. The leakage limit is an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. PIV leakage could lead to overpressure of the low pressure piping or components. The failure consequences could be a

LOCA outside of containment or an unanalyzed accident that could degrade the ability for low pressure injection.

TS LCO 3.4.14 requires RCS PIV leakage to be within the limits in Modes 1, 2, 3 and 4 with the exception of valves in the RHR flow path when in, or during the transition to or from, the RHR mode of operation.

TS 3.4.14 limits RCS leakage because of the concern of over-pressurization of a lower pressure system that can lead to an interfacing system LOCA. In Mode 4, the RCS pressure is significantly reduced which reduces the PIV leakage. All LOCA mitigating systems with the exception of the accumulators are available and RHR serves as the backup to AFW for decay heat removal. As a result, defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the NRC staff finds the proposed change to revise Required Action B.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.5 TS 3.4.15 RCS Leakage Detection Instrumentation

Leakage detection systems must have the capability to detect significant RCPB degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Thus, an early indication or warning signal is necessary to permit proper evaluation of all unidentified RCS leakage.

TS LCO 3.4.15 requires in Modes 1, 2, 3 and 4 that the following RCS leakage detection instrumentation be operable:

a. One containment sump (level or discharge flow) monitor,
b. One containment atmosphere radioactivity monitor (gaseous or particulate), and
c. One containment fan cooler unit (FCU) condensate flow rate monitor.

If one function is inoperable, the other functions are available to provide an indication of RCS leakage. In the unlikely event that Condition F (all required monitors inoperable) occurs, the likelihood of an initiating event in Mode 4 is not higher than in Mode 5. Placing the unit in Mode 5 does not increase the instrumentation available for detecting RCS leakage, and therefore there is no benefit with regards to monitoring plant status by proceeding to Mode 5. As a result, defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the NRC staff finds the proposed change to revise Required Action E.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.6 TS 3.5.3 ECCS – Shutdown

The function of the Emergency Core Cooling System (ECCS) is to provide core cooling and negative reactivity to ensure that the reactor core is protected after any of the following accidents:

a. LOCA, coolant leakage greater than the capability of the normal charging system,

b. Rod ejection accident,

c. Loss of secondary coolant accident, including uncontrolled steam release or loss of feedwater, and

d. Steam generator tube rupture.

TS 3.5.3 is only applicable in Mode 4. In Mode 4, the required ECCS train consists of three separate subsystems: two safety injection subsystems (high head) and one RHR subsystem (low head). The ECCS flow paths consist of piping, valves, heat exchangers, and pumps such that water from the RWST can be injected into the RCS following an accident, and if necessary, water from the containment sump can also be injected into the RCS. The current LCO requires that two ECCS high head safety injection subsystems and one ECCS RHR subsystem be operable in Mode 4 for IP2 and one ECCS RHR subsystem and one ECCS recirculation subsystem be operable in Mode 4 for IP3.

The subsystems addressed in this TS are the ECCS RHR and ECCS High Head Safety Injection subsystems which are both included in the quantitative risk evaluation (Reference 2). The requested change in Action A.1 will enable the unit to remain in a mode where SG cooling is also available for decay heat removal.

Table 3.2.1, in the final SE of WCAP-16294, shows that the plant operating state (POS) 4 core damage probability (CDP) is approximately seven times greater than the POS 3 CDP. Proceeding to Mode 5 does not significantly increase the protection available, and additional risk is introduced by switching from AFW cooling to RHR cooling. This supports remaining in Mode 4 for this configuration rather than cooling down to Mode 5.

POS 3 is defined as the lower part of Mode 3 and the upper part of Mode 4. The RCS pressure and temperature are significantly reduced from power operation; therefore, many of the events associated with the high RCS pressure (LOCAs/pipe breaks) have a reduced frequency. In addition, accumulators are isolated. In POS 3 the plant is transitioning down (toward shutdown).

POS 4 is defined as the lower part of Mode 4 and the upper part of Mode 5. The transition from AFW cooling to RHR cooling occurs in this POS. The RCS pressure and temperature are significantly reduced from power operation; therefore, the LOCA events and SG tube rupture event are no longer applicable. The secondary side pressure is also reduced eliminating the secondary side break events. The potential for loss of inventory related to the RCS cooling switch from AFW to RHR is an event that is added. This can occur when transitioning down or up. The potential for cold overpressurization is also added.

In response to the NRC staff's request for additional information (RAI) stated below, the licensee revised its original proposed change for CONDITION A, "Required ECCS train inoperable," to "Required ECCS subsystem inoperable." The revised proposed change is consistent with the licensee's specific TS LCO 3.5.3, therefore, it is acceptable. The proposed change to the Required Action A.1 end state does not change the operability requirement for the ECCS. The required subsystems to perform the ECCS safety function still must be operable in Mode 4. If one subsystem of ECCS is inoperable, then remaining in Mode 4 provides core cooling from the AFW pumps with the operable ECCS subsystem as a backup. If any one of the required subsystems of ECCS is inoperable, then the unit will remain on AFW cooling while the required subsystem is restored. The probability of transients occurring that require the ECCS are less likely in Mode 4 than at-power and the risk associated with transferring to RHR cooling from AFW cooling is eliminated by remaining in Mode 4. Sufficient defense-in-depth is maintained when the unit remains in Mode 4 rather than transitioning to Mode 5. Therefore, the NRC staff finds the proposed change to revise TS 3.5.3 so that the plant would be allowed to remain in Mode 4 to be acceptable.

By letter dated August 13, 2013 (ADAMS Accession No. ML 13207A410), the NRC issued a request for additional information (RAI) regarding the following:

> RAI #1
>
> Other than the ECCS injection points, IP2's UFSAR and IP3's UFSAR essentially read the same for the ECCS. Explain why the limiting conditions for operation are different between IP2 TS 3.5.3 and IP3 TS 3.5.3.
>
> RAI #2
>
> Explain how the TR-WCAP-16294 quantitative risk evaluation for TS 3.5.3 applies to both IP2 and IP3.

By letter dated October 11, 2013 (ADAMS Accession No. ML13294A092), the licensee provided the following response:

> Response to RAI #1
>
> The difference in limiting conditions for operation between IP2 TS 3.5.3 and IP3 TS 3.5.3 is a result of the conversion from Custom Technical Specifications (CTS) to Improved Technical Specifications (ITS) as explained below.
>
> IP3 ITS
>
> At the time of the ITS amendment request the CTS had a requirement for ECCS operability in Mode 4 requiring one ECCS Residual Heat Removal (RHR) subsystem and one ECCS recirculation subsystem to be Operable. There was no requirement in CTS for High Head Safety Injection (HHSI) operability. The ITS amendment proposed to establish Mode 4 requirements consistent with existing licensing basis, the CTS requirements. Amendment No. 205 (COR-05-01088, February 27, 2001, ML010300411) approved the conversion from CTS to ITS. The NRC Safety Evaluation Report (SER) acknowledged that it is acceptable for the ITS to differ from the Standard Technical Specifications (STS) (NUREG-1431) in order to reflect the CTS requirements for IP3.
>
> IP2 ITS
>
> The IP2 ITS amendment request was subsequent to IP3. In contrast to the IP3 CTS the IP2 CTS had no requirement for ECCS operability in Mode 4. The

original amendment request proposed to establish Mode 4 requirements consistent with those already approved for IP3 (i.e. one ECCS RHR subsystem and one ECCS recirculation subsystem) rather than adopt the NUREG-1431. Following NRC request for additional information (RAI), a supplement to the LAR established the requirement for one ECCS HHSI subsystem and one ECCS RHR subsystem to be Operable in Mode 4 consistent with NUREG-1431. This requirement was later amended to two ECCS HHSI subsystems and one ECCS RHR subsystem. Amendment No. 238 (COR-04-00270, November 21, 2003, ML033160528) approved the conversion from CTS to ITS.

Response to RAI #2

As noted in the RAI#1 response, IP2 TS 3.5.3 was made consistent with STS 3.5.3, recognizing differences in configuration. The STS refers to a two train ECCS, where each train includes a high pressure and low pressure subsystem. The STS centrifugal charging pumps are used for high pressure safety injection and the RHR pumps and heat exchangers are used for low pressure safety injection. The Indian Point ECCS consists of the HHSI subsystem (which are not as high pressure as the STS centrifugal charging pumps) and the RHR pumps (low head) and heat exchangers.

For adapting TSTF-432 to TS 3.5.3, the previously proposed IP2 TS 3.5.3, which requires one RHR subsystem and two HHSI subsystems is being retained with the exception that Condition A is changed to refer to the "Required ECCS subsystem" rather than "train" for consistency with the LCO (the required action is similarly changed). For consistency with the STS and IP2, Entergy is proposing to revise the IP3 TS 3.5.3 to make it identical to the above described IP2 TS 3.5.3. The IP2 TS limiting condition was based on generic Westinghouse analysis performed in Reference 1 that is also valid for IP3. Since this change is consistent with STS 3.5.3 TSTF-432, the No Significant Hazards Consideration of Reference 1 remains valid. The IP2 and IP3 proposed TS 3.5.3 changes of Reference 2 should be replaced by Attachment 2, herein, and the proposed TS 3.5.3 Bases change of Reference 2 should be replaced by Attachment 3, herein.

With the above proposed changes, the TR-WCAP-16294 quantitative risk evaluation for TS 3.5.3 applies to both IP2 and IP3. WCAP-16294 discusses plant designs that include separate low pressure safety injection pumps and RHR pumps (such as IP2 and IP3). While not specifically modeled in the PRA, the WCAP concluded that this would result in lower risk for both plant operating states, and there would be no change in the WCAP conclusions (Section 6.3.1). Further, the TS change being implemented is the change to the end state, for which the WCAP quantification remains valid. Section 6.3.2 of WCAP-16294 states: "There is an increase in CDP with the additional transition required to achieve Mode 5 as opposed to Mode 4. This is related to the risk associated with the transition from SG cooling to the shutdown (RHR) cooling and operator actions being required to initiate event mitigation equipment. The key initiating event is the loss of RHR cooling with operator failure to establish alternate cooling."

After reviewing the licensee's response, the NRC staff noticed that the IP2 TS LCO 3.5.3 requirement for two ECCS HHSI subsystems and one ECCS RHR subsystem was added per the staff's approved amendment during IP2's TS conversion process. The staff also noted the licensee's proposed change to IP3's TS LCO 3.5.3 for consistency with the STS and IP2. The staff finds the proposed change acceptable since it is more conservative and has previously been reviewed and approved by the staff for IP2, which has a nearly identical ECCS to IP3.

During IP2's TS conversion, the NRC staff concluded that for ECCS operability in Mode 4, two ECCS HHSI subsystems and one ECCS RHR subsystem are sufficient to perform the necessary ECCS safety function. The licensee now proposes the same requirement for IP3's TS LCO 3.5.3. Since the IP2 and IP3 ECCSs are similar, and because the proposed revision is more conservative, the licensee's proposed deletion of the current IP3 TS LCO 3.5.3 requirement for a single ECCS recirculation subsystem is acceptable. Also, the RHR subsystem can perform the same recirculation function that is performed by the ECCS recirculation subsystem..

The licensee's response to RAI #2 stated that the TR-WCAP-16294 quantitative risk evaluation for TS 3.5.3 applies to both IP2 and IP3. The response explains that the high head safety injection pumps for high pressure injection in Mode 4 at Indian Point operate at a lower pressure than the centrifugal charging pumps assumed in the STS for this function. The response also noted that for plant designs that include separate low pressure safety injection pumps and RHR pumps (such as IP2 and IP3), the WCAP concluded that, while not specifically modeled in the PRA performed for TR-WCAP-16294, there would be no change in the WCAP conclusions. The NRC staff agrees that these differences with the PRA system modeling used in TR-WCAP-16294 do not impact the applicability of TR-WCAP-16294 for this application.

3.1.2.7 <u>TS 3.5.4 Refueling Water Storage Tank (RWST)</u>

The RWST supplies borated water to the chemical and volume control system during abnormal operating conditions, to the refueling cavity during refueling, and to the ECCS and the containment spray system during accident conditions. The RWST supplies both trains of the ECCS and the containment spray system during the injection phase following a LOCA.

During normal operation in Modes 1, 2, and 3, the SI and RHR pumps are aligned to take suction from the RWST. TS LCO 3.5.4 requires that the RWST be operable in Modes 1, 2, 3, and 4.

Since SI and recirculation may not be available due to an inoperable RWST, any loss of inventory events that cannot be isolated can lead to core damage. From Table 3.2.1 in the final SE of WCAP-16294, remaining in Mode 4 (POS 3) instead of cooldown to Mode 5 (POS 4, upper portion of Mode 5) reduces the CDP by more than a factor of 3. The primary accidents such as LOCAs and steam line breaks (SLBs) are less likely to occur in Mode 4. Since control rods are inserted in Mode 4, the SLB analysis assumption of the highest worth rod stuck is an unlikely scenario. In the lower part of Mode 4, transients progress slower than at power, backup cooling is available via RHR, and there is increased time for operator action and mitigation strategies. Proceeding to Mode 5 may add additional risk by switching from AFW cooling to RHR cooling. Based on Table 3.2.1 in the final SE of WCAP-16294, if the RWST is inoperable, a shutdown to Mode 4 is appropriate.

In Mode 4, the transient conditions are less severe than at power so that variations in the RWST parameters or other reasons of inoperability are less significant. In addition, if the boron concentration is low, the emergency boration equipment is likely to be available to increase the RCS boron concentration. By changing the end state for Required Action D.2 to Mode 4, the possibility of a loss of inventory event due to switching to RHR cooling is eliminated, reducing the possibility that the RWST inventory would be required. As a result, defense-in-depth is maintained when the unit remains in Mode 4 rather than transitioning to Mode 5 with LCO 3.0.4.a not applicable for entry into Mode 4. In addition, the NRC staff anticipates that equipment repairs requiring plant shutdown and entry into Mode 4 would be infrequent events of short duration. Therefore, the staff finds the proposed change to revise TS 3.5.4 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.8 TS 3.6.6 Containment Spray System and Containment Fan Cooler Unit (FCU) System (Credit taken for iodine removal by the Containment Spray System)

The containment spray and fan cooler unit (FCU) systems provide containment atmosphere cooling to limit post-accident pressure and temperature in containment to less than the design values. The containment spray system consists of two separate trains. Each train includes a containment spray pump, piping and valves and is independently capable of delivering one-half of the design flow needed to maintain the post-accident containment pressure below 47 psig. Each train is powered from a separate engineered safety features (ESF) bus. The RWST supplies borated water to the containment spray system during the injection phase of operation. After the RWST has been exhausted, the containment recirculation pumps or RHR pumps are used to supply the containment spray ring headers.

The Containment Fan Cooler System consists of five 20% capacity FCUs located inside containment. These FCUs are used for both normal and post-accident cooling of the containment atmosphere. Each FCU consists of a motor, fan, cooling coils, dampers, duct distribution system, instrumentation and controls. Service water is supplied to the cooling coils to perform the heat removal function. During normal plant operation, service water is supplied to all five FCUs and one or more FCUs fans may be operated for containment cooling.

Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a DBA, to within limits. The LCO requires that two containment spray trains and three FCU trains be operable in Modes 1, 2, 3, and 4.

The containment spray and FCUs are designed for accident conditions initiated at full power. Design assumptions regarding containment air cooling are met by any of the following configurations: (1) two containment spray trains; (2) three fan cooler trains (i.e., five fan cooler units); or, (3) one containment spray train and any two fan cooler trains (i.e., at least three fan cooler units). If one train of either containment spray or FCUs is inoperable the other train is available to mitigate the accident along with both trains of the other system. If all trains of FCUs are inoperable, containment spray can serve as the cooling system. One train of containment spray is assumed to function to improve iodine removal from the containment atmosphere. Condition F requires that if two containment spray trains are inoperable or any combination of three or more trains are inoperable the plant must immediately enter LCO 3.0.3. The requirements of Criterion 38 will still be met. Therefore, the NRC staff finds the proposed change to be acceptable.

3.1.2.9 TS 3.6.7 Recirculation pH Control System

The recirculation pH control system is a passive safeguard with baskets of tri-sodium phosphate located in the containment sump area. The system consists of four baskets at the 46 foot elevation inside the containment building.

The tri-sodium phosphate dissolves when the water level in the containment sump rises to the level of the baskets. It is highly unlikely that all of the baskets would be empty; therefore, an inoperable recirculation fluid pH control system would still provide some pH control.

The recirculation fluid pH control system TS currently requires the unit to be in Mode 3 in 6 hours and Mode 5 in 84 hours if the system is inoperable, and the Required Action and associated CT are not met. The LCO requires the recirculation fluid pH control system to be operable in Modes 1, 2, 3, and 4.

Evaluation of the Recirculation Fluid pH Control System

TR WCAP-16294 provides the technical basis for the proposed change by indicating that "Events, such as a LOCA or a secondary side break, are less likely in Mode 4 due to the limited time in the mode and less severe thermal-hydraulic conditions. As a result, defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4." TR WCAP-16294 also indicates that "proceeding to Mode 5 does not increase the protection available." TR WCAP-16294 also states that it is highly unlikely that all of the baskets would be empty; therefore, an inoperable recirculation fluid pH control system would still provide some pH control.

Containment spray will still be available to reduce the iodine fission product inventory in the containment. The RCS pressures and temperatures are lower, the ECCS operation is maintained so the criteria of 10 CFR 50.46 are met, and the containment spray systems and containment cooling systems are available to depressurize and reduce the airborne radioiodine in containment. Therefore, the NRC staff finds the proposed change to be acceptable.

3.1.2.10 TS 3.7.7 (IP2) TS 3.7.8 (IP3) Component Cooling Water (CCW) System
TS 3.7.8 (IP2) TS 3.7.9 (IP3) Service Water System (SWS)

Component Cooling Water (CCW) System: The CCW system provides a heat sink for the removal of process and operating heat from safety related components during a DBA or transient. During normal operation, the CCW system also provides this function for various nonessential components as well as the spent fuel storage pool. The CCW system serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the SWS, and thus to the environment. The CCW system is arranged to consist of two independent, full capacity cooling trains, and has the ability to isolate non-safety related components. Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, and instrumentation, and is powered from a separate bus. An open surge tank in the system ensures that sufficient net positive suction head is available. The CCW pumps continue to operate following a SI signal without loss of offsite power.

The principal safety related function of the CCW system is the removal of decay heat from the reactor via the RHR system. This may be during a normal or post-accident cooldown and shutdown. The LCO requires that two CCW trains be operable in Modes 1, 2, 3, and 4.

Service Water System (SWS): SWS consists of two separate, 100 percent capacity, safety related, cooling water header. Each header is supplied by three pumps and includes the pump strainers and the piping up to and including the isolation valves on individual components cooled by the SWS. SWS heat loads are designated as either essential or non-essential. The essential SWS heat loads are those which must be supplied with cooling water immediately in the event of a LOCA and/or loss of offsite power. Examples of essential loads are the diesel generators (DGs) and containment fan cooler units (FCUs). The non-essential SWS heat loads are those which are required following a postulated LOCA only after the switch over to the recirculation phase. The most significant non-essential loads are the CCW heat exchangers. The pumps associated with the SWS header designated as the essential header will start automatically. The SWS pumps associated with the SWS header designated as the non-essential header must be manually started when required during recirculation phase following a LOCA.

The SWS provides a heat sink for the removal of process and operating heat from safety related components during a DBA or transient. During normal operation and a normal shutdown, the SWS also provides this function for various safety related and non-safety related components. The principal safety related function of the SWS is supplying cooling water to the diesel generators and the containment FCUs and the removal of decay heat from the reactor via the CCW System. The safety related function is covered by TS LCO 3.7.8 (IP2)/ TS LCO 3.7.9 (IP3), which requires that three pumps and required flow path for the essential SWS header and two pumps and required flow path for the non-essential SWS header shall be operable in Modes 1, 2, 3, and 4.

<u>Evaluation of the CCW system and SWS</u>

The CDP values listed in Table 3.2.1 of the final SE of TR WCAP-16294 show that there is slightly less risk associated with Mode 4 than there is with a cooldown to Mode 5 when a train of CCW or SWS is inoperable. One CCW or SWS train will be operating when the unit enters Mode 4. Each train is designed to handle 100 percent of the heat loads during power operation and accident conditions. The heat loads will be significantly less in the shutdown modes and some accidents are less likely to occur. As a result, sufficient defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. Therefore, the NRC staff finds the proposed change to revise TS 3.7.7(IP2)/ TS 3.7.8 (IP3) Required Action B.2 and TS 3.7.8 (IP2) Required Action E.2 and TS 3.7.9 (IP3) Required Action F.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.11 <u>TS 3.7.9 (IP2)/ TS 3.7.10 (IP3) Ultimate Heat Sink (UHS)</u>

The Ultimate Heat Sink (UHS) provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the SWS and the CCW system.

The UHS for IP2 and IP3 is the Hudson River. The UHS has been defined as the complex of a water source, including necessary retaining structures (e.g., a river), and the canals or conduits connecting the source with, but not including, the cooling water system intake structures as discussed in WCAP-12312. The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident. TS LCO 3.7.9 (IP2)/ TS LCO 3.7.10 (IP3) requires that the UHS be operable in Modes 1, 2, 3, and 4.

TS 3.7.9 addresses degradations to the cooling capability of the UHS. The most likely scenario for entering Condition A is that the cooling capability of the UHS is only partially degraded. A cooldown to Mode 4 places the unit in a state where heat loads are significantly less than at full power.

The UHS is designed to remove 100 percent of the heat loads generated during power operation and accident conditions. The heat load will be significantly less in shutdown modes. Some accidents are less likely to occur during shutdown modes. As a result, sufficient defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. Therefore, the NRC staff finds the proposed change to revise Required Action A.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.12 <u>TS 3.7.10 (IP2) TS 3.7.11 (IP3) Control Room Ventilation System (CRVS)</u>

The CRVS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity. The CRVS consists of two redundant trains that recirculate and filter the control room air. Each train consists of a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system.

The CRVS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), normal air supply to the control room is isolated, and the stream of ventilation air is recirculated through the system filter trains. TS LCO 3.7.10 (IP2)/ TS LCO 3.7.11 (IP3) requires that two CRVS trains be operable in Modes 1, 2, 3, 4, and during movement of recently irradiated fuel assemblies.

If one CRVS train is inoperable, the other train remains available to provide control room filtration. If two CRVS trains are inoperable, an independent initiating event and radioactive release must occur for filtration to be required in Mode 4. As a result, sufficient defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. Therefore, the NRC staff finds the proposed change to revise Required Action D.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.13 <u>TS 3.7.12 (IP3) Control Room Air Conditioning System (CRACS)</u>

The Control Room Air Conditioning System (CRACS) is an emergency system, parts of which may also operate during normal unit operations. The CRACS consists of two independent and redundant trains that provide cooling and heating of recirculated control room air. Each train consists of heating coils, cooling coils, instrumentation, and controls to provide for control room temperature control following isolation of the control room. TS LCO 3.7.11 requires that two CRACS trains be operable in Modes 1, 2, 3, 4, 5, 6, and during movement of recently irradiated fuel assemblies.

If one CRACS train is inoperable, the other train remains available to provide control room temperature control. The slower nature of accident event progression in the shutdown modes, and increased time for operator actions and mitigation strategies, limit the severity of accidents in the shutdown modes. The inoperability of equipment does not affect the likelihood of an event occurring and some events are less likely to occur in the shutdown modes. As a result, sufficient defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. Therefore, the NRC staff finds the proposed change to revise Required Action B.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.14 TS 3.8.1 AC Sources – Operating
TS 3.8.4 DC Sources – Operating
TS 3.8.7 Inverters – Operating
TS 3.8.9 Distribution Systems – Operating

Alternating Current (AC) Sources: The Class 1E AC electrical power distribution system AC sources consist of the offsite power sources (preferred power sources, normal and alternates), and the onsite standby power sources (Train A and Train B diesel generators (DGs)). The AC electrical power system provides independent and redundant sources of power to the ESF system.

The onsite Class 1E AC distribution system is divided into redundant load groups (trains) so that the loss of any one group does not prevent the minimum safety functions from being performed. Each train has connections to two preferred offsite power sources and a single DG. An offsite circuit consists of all breakers, transformers, switches, interrupting devices, cabling, and controls required to transmit power from the offsite transmission network to the onsite Class 1E ESF buses. Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the transformer supplying offsite power to the onsite Class 1E distribution system.

After the diesel generator (DG) has started, it will automatically tie to its respective bus after offsite power is tripped as a consequence of ESF bus undervoltage or degraded voltage, coincident with an SI signal or unit trip. The DGs will also start and operate in the standby mode without tying to the ESF bus on an SI signal alone. Following the trip of offsite power, an undervoltage signal strips nonpermanent loads from the ESF bus. When the DG is tied to the ESF bus, loads are then sequentially connected to its respective ESF bus by individual load timers. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading the DG by automatic load application.

In Modes 1, 2, 3, and 4, the TS LCO 3.8.1 requires: (1) two qualified circuits between the offsite transmission network and the onsite AC electrical power distribution system, and (2) three DGs capable of supplying the onsite power distribution subsystem(s).

Direct Current (DC) Sources: The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). The DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of RG 1.6, "Independence between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems (Safety Guide 6)."

The 125 Volt DC (VDC) electrical power system consists of four separate systems, each having its own battery, battery charger, and power panel. Each battery is fed from a separate charger and each charger is fed from a separate AC power panel. Under normal conditions, each battery charger supplies its DC loads, while maintaining its associated battery at full charge.

The typical 250 VDC source is obtained by the use of the two 125 VDC batteries connected in series. Additionally there is one spare battery charger per subsystem which provides backup service in the event that the preferred battery charger is out of service. If the spare battery charger is substituted for one of the preferred battery chargers, then the requirements of independence and redundancy between subsystems are maintained.

During normal operation, the 125/250 VDC load is powered from the battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the station batteries.

In Modes 1, 2, 3, and 4, the TS LCO 3.8.4 requires that Battery 21, 22, 23, and 24 and their associated battery chargers be operable.

Inverters: The function of the inverter is to convert DC to AC. Through use of an inverter, the station batteries can provide AC electrical power to the vital buses. The inverters can be powered from an AC source or from the station battery. The station battery provides an uninterruptible power source for the instrumentation and controls for the reactor protection system (RPS) and the ESFAS.

The four (two per train) inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the RPS and ESFAS instrumentation and controls so that the fuel, RCS, and containment design limits are not exceeded. The TS LCO 3.8.7 requires that the Train A and Train B inverters be operable in Modes 1, 2, 3, and 4.

Distribution systems: The onsite Class 1E AC, DC, and AC vital bus electrical power distribution systems are divided by trains into two redundant and independent AC, DC, and AC vital bus electrical power distribution subsystems.

The AC electrical power subsystem for each train consists of 480 and 120 V buses, distribution panels, motor control centers, and load centers. Each ESF bus has at least one separate and independent offsite source of power as well as a dedicated onsite DG source. Each ESF bus is normally connected to a preferred offsite source. After a loss of the preferred offsite power source to an ESF bus, a transfer to the alternate offsite source is accomplished by utilizing a time delayed bus undervoltage relay. If all offsite sources are unavailable, the onsite emergency DG supplies power to the ESF bus. Control power for the breakers is supplied from the Class 1E batteries.

The secondary AC electrical power distribution subsystem for each train includes the safety related buses, load centers, motor control centers, and distribution panels shown in Table B 3.8.9-1 of NUREG-1431, Volume 2 (Reference 11). The 120 VAC vital buses are arranged in two load groups per train and are normally powered from the inverters. The alternate power supply for the vital buses are Class 1E constant voltage source transformers powered from the same train as the associated inverter. The DC electrical power distribution subsystem consists of 125 V bus(es) and distribution panel(s).

TS LCO 3.8.9 requires that Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems be operable in Modes 1, 2, 3, and 4.

Evaluation of AC Sources, DC Sources, Inverters, and Distribution Systems

The final SE of TR WCAP-16294, Table 3.2.1, shows that the CDP decreases slightly when the unit is cooled down to Mode 4 instead of Mode 5 for each condition in TS 3.8.1, TS 3.8.4, TS 3.8.7, and TS 3.8.9.

For TS 3.8.1, two trains of DGs are available if two offsite power circuits are inoperable and two offsite power circuits are available if two DGs are inoperable. If an offsite power circuit and/or a DG are inoperable, at least one of each remains available. For TS 3.8.4, there are two redundant trains of DC power; so if one is inoperable, the other is available to provide the necessary DC power. For TS 3.8.7, there are two redundant trains of inverters; so if one is inoperable, the other train is available to provide the necessary AC power.

The slower nature of event progression during shutdown modes provides increased time for operator actions and mitigation strategies if an event were to occur. In addition, some events are less likely to occur during shutdown modes. As a result, defense-in-depth is maintained when the end state is changed from Mode 5 to Mode 4. Therefore, the NRC staff finds the proposed change to revise TS 3.8.1 Required Action G.2, TS 3.8.4 Required Action D.2, TS 3.8.7 Required Action B.2, and TS 3.8.9 Required Action D.2 so that the plant would be allowed to remain in Mode 4 to be acceptable.

3.1.2.15 Mode 4 Secondary Side Steam Pressure

TR WCAP-16294 indicates that while in Mode 4, the secondary side steam pressure will be less than normal operating pressure. NEI determined that there will be sufficient pressure available to operate the turbine driven AFW pumps. This will assure the defense-in-depth will remain available while remaining in Mode 4. Therefore, the NRC staff finds the change acceptable.

3.2 Risk Evaluation

The licensee stated in its application that the information in the Westinghouse TR WCAP-16294 and Traveler TSTF-432 are applicable to IP2 and IP3. As stated in Section 2.0 above, the NRC staff reviewed TR WCAP-16294 using SRP Chapters 19.2 and 16.1, and the five key principles of risk-informed decision making presented in RG 1.174 and RG 1.177. The staff finds the risk evaluation as discussed in the staff's final SE of TR WCAP-16294 (Reference 10) is applicable to IP2 and IP3, and therefore the risk evaluation is acceptable.

3.3 TS Bases Changes

TSTF-432 included, and the licensee submitted, the following TS Bases changes:

- A reference to the NRC-approved TR WCAP-16294 has been added to the reference section of the TS Bases for each TS affected in TSTF-432.
- The following statement was added to each TS Bases Action section affected:

> Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. [ ]). In MODE 4 the steam generators and residual heat removal system are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference [ ], the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

The NRC staff generally does not approve TS bases changes; however the staff does review the changes for consistency with the proposed TS change. The staff determined that TS Bases changes are consistent with the proposed TS changes and the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132).

3.4 Summary

The NRC staff has reviewed the licensee's proposed adoption of TSTF-432 to modify the TS requirements to permit an end state of hot shutdown mode with the implementation of TR WCAP-16294 and found the changes to be consistent with the approved TR WCAP-16294.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (78 FR 44170). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

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

7.0 REFERENCES

1. TSTF-432, Revision 1, "Change in Technical Specifications End States WCAP-16294," dated November 29, 2010. (ADAMS Accession No. ML103360003)

2. WCAP-16294-NP-A, Revision 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010. (ADAMS Accession No. ML103430249)

3. NUREG-1431, Volume 1, Revision 3.0, "Standard Technical Specifications Westinghouse Plants, Specifications," US NRC, June 2004. (ADAMS Accession No. ML041830612)

4. Regulatory Guide 1.174, Revision 1, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," US NRC, November 2002. (ADAMS Accession No. ML023240437)

5. Regulatory Guide 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," US NRC, August 1998. (ADAMS Accession No. ML003740176)

6. Regulatory Guide 1.182, "Assessing and Managing Risk before Maintenance Activities at Nuclear Power Plants," US NRC, May 2000. (ADAMS Accession No. ML003699426)

7. NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities," dated February 22, 2000. (ADAMS Accession No. ML003704489)

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

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

10. Final Safety Evaluation of NEI Topical Report WCAP-16294-NP, Revision 0, "Risk-Informed Evaluation of Changes to Technical Specification Required Endstates for Westinghouse NSSS PWRs," dated March 29, 2010. (ADAMS Package Accession No. ML100820533)

11. NUREG-1431, Volume 2, Revision 3.0, "Standard Technical Specifications Westinghouse Plants, Bases," US NRC, June 2004. (ADAMS Accession Package No. ML041830205)

12. Entergy's response to Request for Additional Information Regarding License Amendment To Adopt TSTF-432-A, Rev 1, "Change in Technical Specifications End States WCAP-16294" (ADAMS Accession No. ML 13294A092) (TAC NOS. MF1898 AND MF1899)

Principle Contributors: K. Bucholtz
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Date: July 7, 2014

July 7, 2014

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SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 - ISSUANCE OF AMENDMENTS RE: TECHNICAL SPECIFICATION TASK FORCE TRAVELER (TSTF) 432, "CHANGE IN TECHNICAL SPECIFICATIONS END STATES (WCAP-16294 (TAC NOS. MF1898 AND MF1899)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 275 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2 and Amendment No. 252 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated May 23, 2013, as supplemented by letter dated October 11, 2013.

The amendments revise the TSs to risk-inform requirements regarding selected Required Action End States. Specifically, the changes permit an end state of Mode 4 rather than an end state of Mode 5 consistent with Technical Specification Task Force (TSTF) Traveler TSTF 432-A, Revision 1, "Change in Technical Specifications End States WCAP-16294."

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

Sincerely,
/RA/
Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286
Enclosures:
1. Amendment No. 275 to DPR-26
2. Amendment No. 252 to DPR-64
3. Safety Evaluation

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