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

February 27, 2015

Vice President, Operations
Entergy Operations, Inc.
River Bend Station
5485 US Highway 61N
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-423, REVISION 1, "TECHNICAL SPECIFICATIONS END STATES, NEDC-32988-A" (TAC NO. MF2299)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 185 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated June 13, 2013, as supplemented by letters dated August 28 and November 3, 2014, and January 22, 2015.

The amendment revises the TSs to risk-inform requirements regarding selected Required Action end states. The NRC staff has concluded that the changes are consistent with NRC-approved Technical Specifications Task Force (TSTF) change traveler TSTF-423, Revision 1, "Technical Specifications End States, NEDC-32988-A," dated December 22, 2009, as part of the consolidated line item improvement process. In addition, it approves a change to the facility operating license for the River Bend Station, Unit 1. The change deletes two license conditions that are no longer applicable and adds a new license condition for maintaining commitments required for the approval of this TSTF into the Updated Safety Analysis Report.

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

Sincerely,

Alan Wang

Alan B. Wang, Project Manager
Plant Licensing IV-2 and Decommissioning
Transition Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures:
1. Amendment No. 185 to NPF-47
2. Safety Evaluation

cc w/encls: Distribution via Listserv

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

Replace the following pages of the Facility Operating License No. NPF-47 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

Remove	Insert
-3-	-3-
-6c-	-6c-
-6d-	-6d-

Technical Specifications

Remove	Insert
3.3-75	3.3-75
3.5-2	3.5-2
--	3.5-2a
3.5-3	3.5-3
3.6-23	3.6-23
3.6-25	3.6-25
3.6-29	3.6-29
3.6-37	3.6-37
3.6-46	3.6-46
3.6-51	3.6-51
3.7-3	3.7-3
3.7-6	3.7-6
3.7-9	3.7-9
3.7-12	3.7-12
3.8-4	3.8-4
3.8-24	3.8-24
--	3.8-24a
3.8-35	3.8-35
3.8-39	3.8-39

(3) EOI, pursuant to the Act and 10 CFR Part 70, to receive, possess and to use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

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

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

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

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

(1) Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3091 megawatts thermal (100% rated power) in accordance with the conditions specified herein. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 185 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(20) Commitments Required by Standard TSTF Safety Evaluations

Commitments made as required by standard TSTF Safety Evaluation, as discussed in the notice of availability, will be maintained as described in USAR Section 16. This condition applies to the following TSTFs as approved.

TSTF-423

Changes to the commitments can be made in accordance with 10 CFR 50.59.

3.3 INSTRUMENTATION

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

LCO 3.3.8.2 Two RPS electric power monitoring assemblies shall be OPERABLE for each inservice RPS motor generator set or alternate power supply.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both inservice power supplies with one electric power monitoring assembly inoperable.	A.1 Remove associated inservice power supply(s) from service.	72 hours
B. One or both inservice power supplies with both electric power monitoring assemblies inoperable.	B.1 Remove associated inservice power supply(s) from service.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 ---------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two or more ADS valves inoperable. OR Required Action and associated Completion Time of Condition E or F not met.	G.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. HPCS and Low Pressure Core Spray (LPCS) Systems inoperable. OR Three or more ECCS injection/spray subsystems inoperable. OR HPCS System and one or more ADS valves inoperable. OR Two or more ECCS injection/spray subsystems and one or more ADS valves inoperable.	H.1 Enter LCO 3.0.3.	Immediately

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Low-Low Set (LLS) Valves

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

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

3.6 CONTAINMENT SYSTEMS

3.6.1.7 Primary Containment Unit Coolers

LCO 3.6.1.7 Two primary containment unit coolers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

3.6 CONTAINMENT SYSTEMS

3.6.1.9 Main Steam-Positive Leakage Control System (MS-PLCS)

LCO 3.6.1.9 Two MS-PLCS subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.9.1	Verify air pressure in each associated PVLCS subsystem is ≥ 101 psig.	24 hours

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

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

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
C. Two RHR suppression pool cooling subsystems inoperable.	C.1 Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 36 hours

3.6 CONTAINMENT SYSTEMS

3.6.4.1 Secondary Containment–Operating

LCO 3.6.4.1 The shield building and auxiliary building shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify shield building annulus and auxiliary building vacuum is ≥ 3.0 and ≥ 0.0 inch of vacuum water gauge, respectively.	24 hours

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.4.3 Standby Gas Treatment (SGT) System

LCO 3.6.4.3 Two SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SGT subsystem inoperable.	A.1	Verify OPERABLE SGT subsystem not operating in the primary containment purge flow path.	4 hours
	AND		
	A.2	Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ----------	
		Be in MODE 3.	12 hours
C. Two SGT subsystems inoperable in MODE 1, 2, or 3.	C.1	----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ----------	
		Be in Mode 3.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
H. Required Action and associated Completion Time of Condition A, E, or G not met.	H.1	----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
I. Required Action and associated Completion Time of Condition B, D or F not met. OR Both SSW subsystems inoperable for reasons other than Condition F. OR Three or four UHS cooling tower fan cells inoperable.	I.1 AND I.2	Be in MODE 3. Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify the water level of UHS cooling tower basin is ≥ 78%.	24 hours
SR 3.7.1.2	Verify the average water temperature of UHS is ≤ 88°F.	24 hours
SR 3.7.1.3	Operate each cooling tower fan cell for ≥ 15 minutes.	31 days

(continued)

ACTIONS (continued)

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

(continued)

3.7 PLANT SYSTEMS

3.7.3 Control Room Air Conditioning (AC) System

LCO 3.7.3 Two control room AC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the primary containment or fuel building.

During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One control room AC subsystem inoperable.	A.1 Restore control room AC subsystem to OPERABLE status.	30 days
B. Two control room AC subsystems inoperable.	B.1 Verify control room area temperature ≤ 104°F. AND B.2 Restore one control room AC subsystem to OPERABLE status.	Once per 4 hours 7 days
C. Required Action and Associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

(continued)

3.7 PLANT SYSTEMS

3.7.4 Main Condenser Offgas

LCO 3.7.4 The gross gamma activity rate of the noble gases measured prior to the holdup pipe shall be ≤ 290 mCi/second after decay of 30 minutes.

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

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One required offsite circuit inoperable. AND One required DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems–Operating," when any division is de-energized as a result of Condition E. ----------	
	E.1 Restore required offsite circuit to OPERABLE status. OR	12 hours
	E.2 Restore required DG to OPERABLE status.	12 hours
F. Two required DGs inoperable.	F.1 Restore one required DG to OPERABLE status.	2 hours OR 24 hours if Division III DG is inoperable
G. Required Action and Associated Completion Time of Condition A, B, C, D, E or F not met.	G.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours
H. Three or more required AC sources 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 Division I, Division II, and Division III DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required battery charger on Division I or II inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. AND A.2 Verify battery float current ≤ 2 amps. AND A.3 Restore battery charger to OPERABLE status.	2 hours Once per 12 hours 7 days
B. Division I or II DC electrical power subsystem inoperable for reasons other than Condition A.	B.1 Restore Division I and II DC electrical power subsystems to OPERABLE status.	2 hours
C. Division III DC electrical power subsystem inoperable.	C.1 Declare High Pressure Core Spray System and Standby Service Water System pump 2C inoperable.	Immediately
D. Required Action and associated Completion Time for Division I or II DC electrical power subsystem not met.	D.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time for Division III DC electrical power subsystem not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	12 hours 36 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters–Operating

LCO 3.8.7 The Division I and Division II inverters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Division I or II inverter inoperable.	A.1 Restore Division I and II inverters to OPERABLE status.	24 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

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

ACTION (continued)

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

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 185 TO

FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By letter dated June 13, 2013 (Reference 1), as supplemented by letters dated August 28, 2014 (Reference 2), November 3, 2014 (Reference 17), and January 22, 2015 (Reference 18), Entergy Operations, Inc. (Entergy, the licensee), submitted a license amendment request (LAR) which proposed changes to the Technical Specifications (TSs) for River Bend Station, Unit 1 (RBS) nuclear facility. 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-423, "Technical Specifications End States, NEDC-32988-A," dated December 22, 2009 (Reference 3). In addition, the licensee proposed changes to the facility operating license for the RBS. The changes will delete two license conditions that are no longer applicable and add a new license condition for maintaining commitments required for the approval of this TSTF into the Updated Safety Analysis Report (USAR)o.

The supplemental letters dated August 28 and November 3, 2014, 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 as published in the *Federal Register* on August 13, 2013 (78 FR 51226).

The Traveler TSTF-423 incorporates the NRC-approved Boiling Water Reactors Owners' Group's (BWROG's) Topical Report (TR) NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," December 2012 (Reference 4), into NUREG-1433, Revision 4, "Standard Technical Specifications – General Electric Plants (BWR/4)," April 2012, and NUREG-1434, Revision 4, "Standard Technical Specifications – General Electric Plants (BWR/6)," April 2012 (References 5 and 6, respectively). The TR conclusions are applicable for all the boiling-water reactor (BWR) products (BWR/2 through BWR/6). RBS is a BWR/6 facility. The *Federal Register* Notice published on February 18, 2011 (76 FR 9614), announced the availability of this TS improvement as part of the consolidated line item improvement process (CLIIP).

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

RBS TSs defines the following five operational modes. Of specific relevance to TSTF-423 are Modes 3 and 4:

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

The regulations in paragraph 50.36(c)(2)(i) of Title 10 of the *Code of Federal Regulations* (10 CFR), state, in part, that

> When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow the remedial action permitted by the technical specifications until the condition can be met.

The Standard Technical Specifications (STS) and most plant TSs provide, as part of the remedial action, a completion time (CT) for the plant to either comply with remedial actions or restore compliance with the limiting condition for operation (LCO). If the LCO or the remedial action cannot be met, then the reactor is required to be shut down. When the STS and individual plant TSs were written, the shutdown condition, or end state specified, was usually cold shutdown.

TR NEDC-32988-A, Revision 2, provides the technical basis to change certain required "end states" when the TS Actions for remaining in power operation cannot be met within the CTs. Most of the requested TS changes permit an end state of hot shutdown (Mode 3) if risk is assessed and managed, rather than an end state of cold shutdown (Mode 4), contained in the current TS. The proposed LAR was limited to those end states where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the

applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical.

2.0 REGULATORY EVALUATION

In 10 CFR 50.36, "Technical specifications," the Commission established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36(c), TSs are required to include items in the following specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements (SRs); (4) design features; (5) administrative controls. As stated, in part, in 10 CFR 50.36(c)(2)(i):

> Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications....

In describing the basis for changing end states, NEDC-32988-A states, in part, that:

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

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

Most of today's TSs and design basis analyses were developed under the perception that putting a plant in cold shutdown would result in the safest condition and the design basis analyses would bound credible shutdown accidents. In the late 1980s and early 1990s, the NRC and licensees recognized that this perception was incorrect and took corrective actions to improve shutdown operation. At the same time, standard TSs were developed and many licensees improved their TSs. Since enactment of a shutdown rule was expected, almost all TS changes involving power operation, including a revised end state requirement, were postponed (see, for example, the Final Policy Statement on TS Improvements, Reference 7). However, in the mid-1990s, the Commission decided a shutdown rule was not necessary in light of industry improvements. Controlling shutdown risk encompasses control of conditions that can cause potential initiating events and responses to those initiating events that do occur. Initiating events are a function of equipment malfunctions and human error. Responses to events are a function of plant sensitivity, ongoing activities, human error, defense-in-depth, and additional equipment malfunctions.

In practice, the risk during shutdown operations is often addressed via voluntary actions and application of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants" (Reference 8), the Maintenance Rule. Section 50.65(a)(4) states, in part:

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

The NRC staff's approved TSTF-423 states that the changes proposed are consistent with the following rules, regulations, and associated regulatory guidance. Regulatory Guide (RG) 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," May 2000 (Reference 9), provides guidance on implementing the provisions of 10 CFR 50.65(a)(4) by endorsing the revised Section 11 (published separately) to Nuclear Management and Resource Council (NUMARC) 93-01, Revision 3, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," July 2000 (Reference 10). By e-mail dated July 29, 2014, the NRC staff noted that that RG 1.182 was withdrawn since it was determined that the document (RG 1.182) was redundant due to the inclusion of its subject matter in Revision 3 of RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," May 2012 (Reference 11). Withdrawal of RG 1.182 was published in the *Federal Register* on November 27, 2012 (77 FR 70846). The *Federal Register* notice also stated that withdrawal of RG 1.182 neither altered any prior or existing licensing commitments based on its use, nor constituted backfitting as defined in 10 CFR 50.109 (the Backfit Rule) and was not otherwise inconsistent with the issue finality provisions in 10 CFR Part 52.

In addition, the NRC staff observed that RG 1.160 endorsed Revision 4A of the Nuclear Management and Resources Council (NUMARC) 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," April 2011 (Reference 12). NUMARC 93-01 provides methods that are acceptable to the NRC staff for complying with the provisions of Section 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." The model SE for the TSTF currently refers to the guidance in Revision 2 of the NUMARC 93-01.

The NRC staff requested that Entergy confirm that RBS's current licensing basis adheres to the RG 1.160 guidance and commitment to the updated version of NUMARC 93-01. By letter dated August 28, 2014, Entergy confirmed that:

1) it did not identify any inconsistencies with the updated guidance,

2) it meets and is committed to the guidelines of the current NUMARC 93-01, Revision 4A for Maintenance risk assessments, and

3) since NUMARC 93-01, Revision 4A endorses RG 1.160, Entergy uses RG 1.160 as a means to implement 10 CFR 50.65(a)(4). With RG 1.160 superseding RG 1.182, the licensee states that the guidance for risk assessment and risk management processes remain valid.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes

In its LAR, the licensee proposed the following TS changes:

TS 3.3.8.2, Reactor Protection System (RPS) Electric Power Monitoring

Current TS 3.3.8.2 Required Action C.1 states:

> Be in MODE 3.
>
> AND

Revised TS 3.3.8.2 Required Action C.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

Current TS 3.3.8.2 Required Action C.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.5.1, ECCS-Operating

Current TS 3.5.1 Required Action D.1 states:

> Be in MODE 3.
>
> AND

Revised TS 3.5.1 Required Action D.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

Current TS 3.5.1 Required Action D.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

Current TS 3.5.1 Required Action G.1 states:

Be in MODE 3.

AND

Revised TS 3.5.1 Required Action G.1 would state:

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

Be in MODE 3.

Current TS 3.5.1 Required Action G.2, which states "Reduce reactor steam dome pressure to ≤ 100 psig," with a CT of "36 hours," would be deleted.

TS 3.6.1.6, Low-Low Set (LLS) Valves

Current TS 3.6.1.6 Condition B states:

Required Action and associated Completion Time of Condition A not met.

OR

Two or more LLS valves inoperable.

Revised TS 3.6.1.6 Condition B would state:

Required Action and associated Completion Time of Condition A not met.

Current TS 3.6.1.6 Required Action B.1 states:

Be in MODE 3.

AND

Revised TS 3.6.1.6 Required Action B.1 would state:

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

Be in MODE 3.

Current TS 3.6.1.6 Required Action B.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

New TS 3.6.1.6 Condition C would state:

Two or more LLS valves inoperable.

New TS 3.6.1.6 Required Actions C.1 and C.2 would state:

C.1 Be in MODE 3.

AND

C.2 Be in MODE 4.

The CTs for new Required Actions C.1 and C.2 would be 12 hours and 36 hours, respectively.

TS 3.6.1.7, Primary Containment Unit Coolers

Current TS 3.6.1.7 Required Action C.1 states:

Be in MODE 3.

AND

Revised TS 3.6.1.7 Required Action C.1 would state:

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

Be in MODE 3.

Current TS 3.6.1.7 Required Action C.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.6.1.9, Main Steam-Positive Leakage Control System (MS-PLCS)

Current TS 3.6.1.9 Required Action C.1 states:

Be in MODE 3.

AND

Revised TS 3.6.1.9 Required Action C.1 would state:

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

Be in MODE 3.

Current TS 3.6.1.9 Required Action C.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.6.2.3, Residual Heat Removal (RHR) Suppression Pool Cooling

New TS 3.6.2.3 Condition B would state:

> Required Action and associated Completion Time of Condition A not met.

New TS 3.6.2.3 Required Action B.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

The CT for new TS 3.6.2.3 Required Action B.1 would be "12 hours."

Current TS 3.6.2.3 Condition B and Required Action B.1 would be renumbered as Condition C and Required Action C.1. Current TS 3.6.2.3 Condition C and Required Actions C.1 and C.2 would be renumbered as Condition D and Required Actions D.1 and D.2. In addition, new Condition D has been revised to:

> Required Action and associated Completion Time of Condition C not met.

TS 3.6.4.1, Secondary Containment-Operating

Current TS 3.6.4.1 Required Action B.1 states:

> Be in MODE 3.
>
> AND

Revised TS 3.6.4.1 Required Action B.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

Current TS 3.6.4.1 Required Action B.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.6.4.3, Standby Gas Treatment (SGT) System

Current TS 3.6.4.3 Required Action B.1 states:

> Be in MODE 3.
>
> AND

Revised TS 3.6.4.3 Required Action B.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

Current TS 3.6.4.3 Required Action B.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

New TS 3.6.4.3 Condition C would state:

> Two SGT subsystems inoperable in MODE 1, 2, or 3.

New TS 3.6.4.3 Required Action C.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

The CT for new TS 3.6.4.3 Required Action C.1 would be "12 hours."

TS 3.7.1, Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)

Current Condition H states:

> Required Action and associated Completion Time of Condition A, B, D, E, F, or G not met.
>
> OR
>
> Both SSW subsystems inoperable for reasons other than Condition F.
>
> OR
>
> Three or four UHS cooling tower fan cells inoperable.

TS 3.7.2, Control Room Fresh Air (CRFA) System

Current TS 3.7.2 Required Action C.1 states:

Be in MODE 3.

AND

Revised TS 3.7.2 Required Action C.1 would state:

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

Be in MODE 3.

Current TS 3.7.2 Required Action C.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

Revised TS 3.7.2 Required Action E.1 would state:

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

Be in MODE 3.

The CT for current TS 3.7.2 Required Action E.1, which states "Immediately," would be changed to "12 hours."

TS 3.7.3, Control Room Air Conditioning (AC) System

Current TS 3.7.3 Required Action C.1 states:

Be in MODE 3.

AND

Revised TS 3.7.3 Required Action C.1 would state:

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

Be in MODE 3.

Current TS 3.7.3 Required Action C.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.7.4, Main Condenser Offgas

Current TS 3.7.4 Required Action B.3.1 states:

Be in MODE 3.

AND

Revised TS 3.7.4 Required Action B.3.1 would state:

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

Be in MODE 3.

Current TS 3.7.4 Required Action B.3.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.8.1, Alternating Current (AC) Sources-Operating

Current TS 3.8.1 Required Action F.1 states:

Be in MODE 3.

AND

Revised TS 3.8.1 Required Action F.1 would state:

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

Be in MODE 3.

Current TS 3.8.1 Required Action F.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.8.4, DC Sources-Operating

Current TS 3.8.4 Condition D states:

> Required Action and associated Completion time not met.

Revised TS 3.8.4 Condition D would state:

> Required Action and associated Completion Time for Division I or II DC electrical power subsystem not met.

Current TS 3.8.4 Required Action D.1 states:

> Be in MODE 3.
>
> AND

Revised TS 3.8.4 Required Action D.1 would state:

> ----------NOTE----------
> LCO 3.0.4.a is not applicable when entering MODE 3.
> ----------
>
> Be in MODE 3.

Current TS 3.8.4 Required Action D.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

New TS 3.8.4 Condition E would state:

> Required Action and associated Completion Time for Division III DC electrical power subsystem not met.

New TS 3.8.4 Required Actions E.1 and E.2 would state:

> E.1 Be in MODE 3.
>
> AND
>
> E.2 Be in MODE 4.

The CTs for new Required Actions E.1 and E.2 would be 12 hours and 36 hours, respectively.

TS 3.8.7, Inverters-Operating

Current TS 3.8.7 Required Action B.1 states:

Be in MODE 3.

AND

Revised TS 3.8.7 Required Action B.1 would state:

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

Be in MODE 3.

Current TS 3.8.7 Required Action B.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

TS 3.8.9, Distribution Systems-Operating

Current TS 3.8.9 Required Action D.1 states:

Be in MODE 3.

AND

Revised TS 3.8.9 Required Action D.1 would state:

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

Be in MODE 3.

Current TS 3.8.9 Required Action D.2, which states "Be in MODE 4," with a CT of "36 hours," would be deleted.

The changes proposed in the LAR are consistent with the changes proposed and justified in TR NEDC-32988-A, Revision 2, and the associated NRC staff's SE for TSTF-423 dated September 27, 2002 (Reference 13). The evaluation included in the SE, as appropriate and applicable to the changes of TSTF-423, Revision 1, is reiterated here, and differences from the SE are justified. In its application, the licensee commits to TSTF-IG-05-02, "Implementation Guidance for TSTF-423, Revision 0, 'Technical Specifications End States, NEDC-32988-A,'" September 2005 (Reference 14), which addresses a variety of issues such as considerations and compensatory actions for risk-significant plant configurations. An overview of the generic evaluation and associated risk assessment is provided below, along with a summary of the associated TS changes discussed in TR NEDC-32988-A.

3.2 Risk Assessment

The objective of the BWROG TR NEDC-32988-A risk assessment was to show that any risk increases associated with the proposed changes in TS end states are either negligible or negative (i.e., a net decrease in risk). The BWROG topical report documents a risk-informed analysis of the proposed TS change. Probabilistic risk assessment (PRA) results and insights are used, in combination with results of deterministic assessments, to identify and propose changes in "end states" for all BWR plants. This is in accordance with guidance provided in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decision Making on Plant Specific Changes to the Licensing Basis," August 1998 (Reference 15), and RG 1.177, "An Approach for Pant Specific Risk-Informed Decision Making: Technical Specifications," August 1998 (Reference 16). The three-tiered approach documented in RG 1.177 was followed. The first tier of the three-tiered approach includes the assessment of the risk impact of the proposed change for comparison to acceptance guidelines consistent with the Commission's Safety Goal Policy Statement, as documented in RG 1.174. The first tier aims at ensuring that there are no unacceptable temporary risk increases as a result of the TS change, such as when equipment is taken out of service. The second tier addresses the need to preclude potentially high-risk configurations that could result if equipment is taken out of service concurrently with the equipment out of service, as allowed by this TS change. The third tier addresses the application of 10 CFR 50.65(a)(4) of the Maintenance Rule for identifying risk-significant configurations resulting from maintenance-related activities and taking appropriate compensatory measures to avoid such configurations.

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

The BWROG's risk assessment approach was found comprehensive and acceptable in the SE for the topical report. In addition, the analyses show that the three-tiered approach criteria for allowing TS changes are met as follows:

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

- Avoidance of Risk-Significant Configurations (Tier 2): The performed risk analyses, which are based on single LCOs, indicates that there are no high-risk configurations associated with the TS end state changes. The reliability of redundant trains is normally covered by a single LCO. When multiple LCOs occur, which affect trains in several systems, the plant's risk-informed configuration risk management program, or the risk assessment and management program implemented in response to the Maintenance Rule, 10 CFR 50.65 (a)(4), shall ensure that high-risk configurations are avoided. As part of the implementation of TSTF-423, the licensee has committed to follow

Section 11 of NUMARC 93-01, Revision 3, and include guidance in appropriate plant procedures and/or administrative controls to preclude high-risk plant configurations when the plant is at the proposed end state. This commitment shall be incorporated into the licensee's Updated Safety Analysis Report (USAR). The NRC staff finds that such guidance is adequate for preventing risk-significant plant configurations.

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

The generic risk impact of the end state mode change was evaluated subject to the following assumptions, which are incorporated into the TS Bases, and TSTF-IG-05-02 (References 14 and 15):

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

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

3. When Mode 3 is entered as the repair end state, the time the reactor coolant pressure is above 500 pounds per square inch gauge (psig) will be minimized. If reactor coolant pressure is above 500 psig for more than 12 hours, the associated plant risk will be assessed and managed.

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

By letter dated June 13, 2013, the licensee stated, in part, that

- Entergy has previously committed to the guidance of NUMARC 93-01 Section 11, which provides guidance and details on the assessment and management of risk during maintenance. This commitment was included in the application for TSTF-427 and approved by the NRC in Amendment 173 therefore, no new commitment is required[.]

- Entergy will follow the guidance established in TSTF-IG-05-02 "Implementation Guidance for TSTF-423, Revision 2, Technical Specification End States, NEDC-32988-A."

As required by new license Condition 20, the commitment to follow the Implementation Guidance and the prior commitment to follow NUMARC 93-01 shall be incorporated into the

licensee's USAR. By following the Implementation Guidance, the licensee will ensure that defense-in-depth is maintained for key safety functions by ensuring availability of Tier 2 systems/equipment necessary for safe shutdown.

3.3 The Licensee's Optional Changes and Variations

By letter dated June 13, 2013, the licensee stated, in part, that

> TSTF-423 is based on NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6." RBS, Unit 1 TS are based on NUREG-1434, but are not identical to this guidance. As a result, an adaptation of TSTF-423 was required, in some cases, for incorporation into the RBS, Unit 1 TS due to administrative differences in format (e.g., condition letter designation, etc.).
>
> Changes to individual line items to align with the provisions of TSTF-423 are:
>
> 1. Changes to RBS TS 3.6.4.3, Standby Gas Treatment, were needed to incorporate entry into Mode 3 in lieu of the current requirement to enter TS 3.0.3.
>
>   A new Required Action C is added. This additional Required Action is consistent with TSTF-423 as it replaces entering TS 3.0.3 with the Required Action to enter Mode 3.
>
> 2 Changes to RBS TS 3.7.1 are needed to incorporate TSTF-423 line item TS 3.7.1. These changes are consistent with TSTF-423 but require modification to the standard due to the RBS current licensing basis.
>
>   The proposed TS for RBS will separate the shutdown Required Actions into one addressing issues with a single division, revised Required Action H, and one addressing issues with two division, new Required Action I. This allows the single division actions to be limited to Mode 3 while the remainder of the issues being addressed by the new Required Action and including Mode 4 as an end state. The description of changes to the TS are as follows:
>
>   Condition H will be revised to address conditions for one division of Standby Service Water (SSW)/Ultimate Heat Sink (UHS) inoperable, RBS items A, E, or G not met. This will be consistent with TSTF revised Condition C.
>
>   A new Condition I will be added to address conditions for both division of SSW/UHS inoperable, RBS items B, D, or F not met. This will be consistent with TSTF-423 TS 3.7.1 revised Condition E. Conditions addressing "Both SSW subsystems inoperable for reasons other than Condition F." and "Three or four UHS cooling tower fan cells inoperable" will also be addressed by this Condition.

3. Changes to RBS TS 3.7.2, Control Room Fresh Air, were needed; RBS currently has Required Action B addressing two divisions inoperable during Mode 1, 2 or 3 operations. Required Action C will also require entry into Mode 3 within 12 hours if Required Action B is not met consistent with the TSTF.

4. The TS changes in TSTF-423, Revision 0 included changes to STS sections 3.4.4, "Safety/Relief valves (S/RVs)" which are not applicable to the RBS TS. The RBS TS 3.4.4 Conditions differ from those in STS 3.4.4 such that the technical justification provided in Reference 1 is not directly applicable. Specifically RBS TS 3.4.4 Condition A addresses one or more S/RVs inoperable; whereas, STS 3.4.4 Condition A is limited to a single inoperable S/RV.

5. Changes to RBS TS 3.8.7 are limited to Division I and II only. RBS Division III has no inverters for safety related functions. Therefore, requirement to shutdown due to an inoperable inverter is not required.

In its letter dated June 13, 2013, the licensee stated, in part, that

> Minor administrative changes were made to the following items:
>
> | **TSTF-423 Item** | **Change** |
> |---|---|
> | 3.6.1.9 MSIV LCS | System identified as MS-PLCS, no functional difference. |
> | 3.7.3 Control Room Fresh Air | RBS TS 3.7.2 |
> | 3.7.4 Control Room AC | RBS TS 3.7.3 |
> | 3.7.5 Offgas | RBS TS 3.7.4 |

In addition to changes in TSTF-423, as discussed above, the licensee is not requesting changes to a number of the line items identified in TSTF-423. The individual line items are TS 3.4.4, Safety/Relief Valves (S/RVs), TS 3.6.1.8, Penetration Valve Leakage Control System (PVLCS), and 3.6.5.6, Drywell Vacuum Relief System.

The licensee's Optional Changes and Variations stated above are addressed in the licensee's proposed changes to its specific TS LCOs identified below, and in the NRC's assessment of the changes.

3.4 Assessment of TS Changes

Adoption of TSTF-423 requires the following NOTE be added to each Required Action where the end state is changed to Mode 3: "LCO 3.0.4.a is not applicable when entering Mode 3." The addition of the NOTE is acceptable because it prevents an inappropriate use of the LCO 3.0.4.a allowance to go up in Mode with the specified system being inoperable. Since the basis for the NOTE is the same for all affected LCOs, the NRC staff's discussion on the basis for acceptance is not repeated in each assessment below.

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

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

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

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

Modification for End State Required Actions: The change allows the plant to remain in Mode 3 until the repair actions are completed. Required Action C.2, which required the plant to be in Mode 4, is deleted allowing the plant to stay in Mode 3 while completing repairs.

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

The specific failure condition of interest is not risk-significant for BWR PRAs. If the required restoration actions cannot be completed within the specified time, going into Mode 4 at RBS would cause loss of the high-pressure reactor core isolation cooling (RCIC) system and loss of the power conversion system (condenser/feedwater), and would require activating the residual heat removal (RHR) system. In addition, emergency operating procedures (EOPs) direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for reactor pressure vessel (RPV) water makeup and cooling.

Based on the low probability of loss of the RPS power monitoring system during the infrequent and limited time in Mode 3 and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are approximately the same as and in some cases lower than the risks of going to the Mode 4 end state; therefore, the change is acceptable.

3.4.2 LCO 3.5.1: Emergency Core Cooling Systems (ECCS) - Operating

The ECCS provides cooling water to the core in the event of a loss-of-coolant accident (LOCA). This set of ECCS TS provides the operability requirements for the various ECCS subsystems as

described below. This TS change would delete the secondary actions. The plant can remain in Mode 3 until the required repair actions are completed. The reactor is not depressurized.

LCO: Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of five safety/relief valves shall be OPERABLE.

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

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

b. If the High Pressure Core Spray (HPCS) system is inoperable, restore to operable status within 14 days (Condition B).

c. Two ECCS injection subsystems inoperable or one ECCS injection and one ECCS spray subsystem inoperable. One ECCS subsystem must be restored to operable status within 72 hours (Condition C).

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

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

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

g. If two or more ADS valves become inoperable, or the Required Action and associated Completion Time of Condition E or F is not met, the plant must be placed in Mode 3 within 12 hours and the reactor steam dome pressure reduced to less than or equal to 100 psig within 36 hours (Condition G).

h. If HPCS and Low Pressure Core Spray (LPCS) Systems inoperable, or three or more ECCS injection/spray subsystems inoperable or HPCS System and one or more ADS valves inoperable or two or more ECCS injection/spray subsystems and one or more ADS valves are inoperable, LCO 3.0.3 must be entered immediately (Condition H).

Modification for End State Required Actions:

a. No change in Required Actions for Conditions A through C.

b. If the Required Action, and associated Completion Time of Condition A, B, or C is not met, then place the plant in Mode 3 within 12 hours (Condition D.1). Required Action D.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs.

c. No change in Required Actions for Conditions E and F.

d. A revised Condition G specifies that if two or more ADS valves become inoperable, or the Required Action and associated Completion Time of Condition E or F is not met then place the plant in MODE 3 within 12 hours (G.1). Required Action G.2 is deleted allowing the plant to stay in Mode 3 while completing repairs.

Assessment: The BWROG performed a comparative PRA evaluation in TR NEDC-32988-A of the core damage risks of operation in the current end state and the Mode 3 end state. The NRC staff's conclusion described in the September 27, 2002, SE for the TR (Reference 13) on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in the current end state Mode 4. For RBS, going to Mode 4 for one ECCS subsystem or one ADS valve would cause loss of the high-pressure core cooling RCIC system, and loss of the power conversion system (condenser/feedwater), and would require activating the RHR system. In addition, plant EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the reactor coolant inventory and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are approximately the same as and in some cases lower than the risks of going to the Mode 4 end state; therefore, the change is acceptable.

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

The function of the LLS valves is to prevent excessive short-duration safety/relief valve cycling during an overpressure event. This TS provides operability requirements for the five safety/relief valves as described below.

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

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

Modification for End State Required Actions: The TS change would keep the plant in Mode 3 until the required repair actions are completed. The plant would not be taken into Mode 4 (cold shutdown) (delete Required Action B.2). Required Action for both LLS valves inoperable was changed from Condition B to new Condition C without changing the Required Action End State.

Assessment: The BWROG performed a comparative PRA evaluation in TR NEDC-32988-A of the core damage risks of operation in the current end state and the Mode 3 end state. The NRC staff's conclusion described in the September 27, 2002, SE for the TR (Reference 13) on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4, the current end state. For RBS, going to Mode 4 for one LLS inoperable S/RV would cause loss of the high-pressure RCIC system, and loss of the power conversion system (condenser/feedwater), and would require activating the RHR system. With one LLS valve inoperable, the remaining valves are adequate to perform the required function. The plant

EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the necessary overpressure protection function during the infrequent and limited time in Mode 3 and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are approximately the same as and in some cases lower than the risks of going to the Mode 4 end state; therefore, the proposed change is acceptable.

3.4.4 LCO 3.6.1.7: Primary Containment Unit Coolers

The primary containment is designed with a suppression pool so that, in the event of a LOCA, steam released from the primary system is channeled through the suppression pool water and condensed without producing significant pressurization of the primary containment. However, the primary containment must also withstand a postulated bypass leakage pathway that allows the passage of steam from the drywell directly into the primary containment airspace, bypassing the suppression pool. The primary containment also must withstand a low energy steam release into the primary containment airspace. The primary containment unit coolers are designed to mitigate the effects of bypass leakage and low energy line breaks.

RBS LCO 3.6.1.7 differs from BWR-6 STS LCO 3.6.1.7. RBS LCO 3.6.1.7 addresses requirements for its plant-specific 'Primary Containment Unit Coolers,' whereas STS LCO 3.6.1.7 specifies requirements for generic BWR-6 'Residual Heat Removal Containment Spray,' system. The licensee's application dated June 13, 2013, provides the following justification on the differentiation,

> RBS has containment unit coolers and does not have a containment spray system. However, the role of the containment unit coolers in preventing containment overpressure failure is basically the same as that assumed in NEDC-32988-A for the containment spray system. Thus, the conclusions of the risk assessments performed in NEDC-32988-A for containment spray are directly applicable to the RBS containment unit coolers.

Since function of the RBS's unit coolers is similar to that of the BWR-6 RHR Containment Spray system, the NRC staff agrees that TSTF-423 can be applied to RBS LCO 3.6.1.7.

LCO: Two primary containment unit coolers shall be OPERABLE.

Condition Requiring Entry into End State: If one required primary containment unit cooler is inoperable, it must be restored to operable status within 7 days (Required Action A1). If two required primary containment unit coolers are inoperable, one of them must be restored to operable status within 8 hours (Required Action B.1). If the Required Action and associated Completion Time not met, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: The TS change would keep the plant in Mode 3 until the required repair actions are completed. The plant would not be taken into Mode 4 (cold shutdown) (delete Required Action C.2).

Assessment: The primary containment is designed with a suppression pool so that, in the event of a LOCA, steam released from the primary system is channeled through the suppression pool water and condensed without producing significant pressurization of the primary containment. The primary containment is designed so that with the pool initially at the minimum water level and the worst single failure of the primary containment heat removal systems, suppression pool energy absorption combined with subsequent operator controlled pool cooling will prevent the primary containment pressure from exceeding its design value. However, the primary containment must also withstand a postulated bypass leakage pathway that allows the passage of steam from the drywell directly into the primary containment airspace, bypassing the suppression pool. The primary containment also must withstand a postulated low energy steam release into the primary containment airspace. The main function of the RHR containment spray system is to suppress steam, which is postulated to be released into the primary containment airspace through a bypass leakage pathway and a low energy line break under design-basis accident (DBA) conditions, without producing significant pressurization of the primary containment (i.e., ensure that the pressure inside primary containment remains within analyzed design limits). (As stated above, per the licensee, function of RBS Primary Containment Unit Coolers is similar to the RHR containment spray.)

Under the conditions assumed in the DBA, steam blown down from the break could find its way into the primary containment through a bypass leakage pathway. In addition to the DBA, a postulated low energy pipe break could add more steam into the primary containment airspace. Under such an extremely unlikely scenario (very small frequency of a DBA combined with the likelihood of a bypass pathway and a concurrent low energy pipe brake inside the primary containment), the RHR containment spray system could be needed to condense steam so that the pressure inside the primary containment remains within the analyzed design limits. Furthermore, containments have considerable margin to failure above the design limit (it is very likely that the containment will be able to withstand pressures as much as three times the design limit). For these reasons, the unavailability of one or both RHR containment spray subsystems has no significant impact on CDF or LERF, even for accidents initiated during operation at power. Therefore, it is very unlikely that the RHR containment spray system will be challenged to mitigate an accident occurring during power operation. This probability becomes extremely unlikely for accidents that would occur during a small fraction of the year (less than 3 days) during which the plant would be in Mode 3 (associated with lower initial energy level and reduced decay heat load as compared to power operation) to repair the failed RHR containment spray system.

Section 5.1 in the NRC staff's September 27, 2002, SE for the TR (Reference 13), summarizes the NRC staff's risk argument for approval of TS 4.5.2.6 and LCO 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System." The argument for staying in Mode 3 instead of going to Mode 4 to repair the RHR containment spray system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 in Reference 13, makes a comparison between the current (Mode 4) and the proposed (Mode 3) end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that

Mode 3 is as safe as Mode 4 (if not safer) for repairing an inoperable RHR containment spray system; therefore, the NRC staff concludes that the proposed change is acceptable.

3.4.5 LCO 3.6.1.9: Main Steam-Positive Isolation Valve (MSIV) Leakage Control System (MS-PLCS)

The MS-PLCS supplements the isolation function of the MSIVs by processing the fission products that could leak through the closed MSIVs after core damage, assuming leakage rate limits which are based on a large LOCA.

RBS TS LCO 3.6.1.9 differs in nomenclature from the BWR-6 STS LCO 3.6.1.9. RBS TS identifies LCO 3.6.1.9 as, 'Main Steam-Positive Isolation Valve (MSIV) Leakage Control System (MS-PLCS),' whereas STS TS addresses LCO 3.6.1.9 as 'Main Steam Isolation Valve (MSIV) Leakage Control System (LCS),' system. The licensee's application states, there is no functional difference between the two systems.

LCO: Two MS-PLCS subsystems shall be operable.

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

Modification for End State Required Actions: The plant would not be taken into Mode 4, (delete Required Action C.2).

Assessment: The BWROG has determined that this system is not significant in BWR PRAs and, based on a BWROG program, many plants have eliminated the system altogether. The unavailability of one or both MSIV LCS subsystems has no impact on CDF or LERF, independently of the mode of operation at the time of the accident. Furthermore, the challenge frequency of the MSIV LCS system (i.e., the frequency with which the system is expected to be challenged to mitigate offsite radiation releases resulting from MSIV leaks above TS limits) is less than 1.0E-6/yr. Consequently, the conditional probability that this system will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0-8. This probability is considerably smaller than probabilities considered "negligible" in RG 1.177 for much higher consequence risks, such as a large early release. (As stated above, per the licensee, function of RBS MS-PLCS is equivalent to BWR TS MSIV-LCS.)

Section 5.1 in in the NRC staff's September 27, 2002, SE for the TR (Reference 13), summarizes the staff's risk argument for approval of TSs 4.5.1.9, 4.5.2.8, and LCO 3.6.1.9, "Main Steam Isolation Valve (MSIV) Leakage Control System (LCS)." The argument for staying in Mode 3 instead of going to Mode 4 to repair the MS-PLCS system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 in Reference 13, makes a comparison between the current (Mode 3) and the proposed (Mode 4) end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-

depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 (if not safer) for repairing an inoperable MS-PLCS system; therefore, the NRC staff concludes that the proposed change is acceptable.

3.4.6 LCO 3.6.2.3: Residual Heat Removal (RHR) Suppression Pool Cooling

Following a DBA, the RHR Suppression Pool Cooling System removes heat from the suppression pool. The suppression pool is designed to absorb the sudden input of heat from the primary system. In the long term, the pool continues to absorb residual heat generated by fuel in the reactor core. Some means must be provided to remove heat from the suppression pool so that the temperature inside the primary containment remains within design limits. At RBS, this function is provided by two redundant RHR suppression pool cooling subsystems.

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

Condition Requiring Entry into End State: If one RHR suppression pool cooling subsystem is inoperable (Condition A), it must be restored to operable status within 7 days (Required Action A.1). If two RHR suppression pool cooling subsystems are inoperable (Condition B), restore one RHR suppression pool cooling subsystem to OPERABLE status within 8 hours. If the RHR suppression pool cooling subsystem cannot be restored to operable status within the allotted time (Condition C), the plant must be placed in Mode 3 within 12 hours (Required Action C.1), and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: A new Condition B and Required Action B.1 with a CT of 12 hours are added for the condition of one RHR suppression pool cooling subsystem inoperable. Current Condition B and Required Action B.1 have been re-lettered to Condition C and Required Action C.1. For two RHR suppression pool cooling subsystems inoperable, current Condition C and Required Actions C.1 and C.2 have been re-lettered to Condition D and Required Actions D.1 and D.2, with CTs of 12 hours and 36 hours, respectivlely and new Condition D has been revised to add [Completion Time "of Condition C" not met].

Assessment: The BWROG completed a comparative PRA evaluation of the core damage risks of operation in the current end state versus operation in the Mode 3 end state. The results described in TR NEDC-32988-A and as evaluated by the NRC staff in the associated September 27, 2002, SE (Reference 13), indicated that the core damage risks while operating in Mode 3 (assuming the individual failure conditions) are lower or comparable to the current end state. One loop of the RHR suppression pool cooling system is sufficient to accomplish the required safety function. By remaining in Mode 3, HPCS (see RBS Note below), RCIC, and the power conversion system (condensate/feedwater) remain available for water makeup and decay heat removal. Additionally, the plant EOPs direct the operators to take control of the depressurization function if low-pressure injection/spray are needed for RCS makeup and cooling. Since defense-in-depth is improved with respect to water makeup and decay heat removal by remaining in Mode 3, the change is acceptable.

Additionally, the licensee's letter dated June 13, 2013, provided the following information:

> RBS has motor-driven main feed pumps, which remain available at low vessel pressure conditions. However, the impact on risk associated with these feedwater pumps would follow the same logic as for the BWR/6 motor driven HPCS pump, as discussed in NEDC-32988-A, with the provision that the importance to risk of the feedwater pumps is much smaller than for the HPCS pump. One particular reason for this is the large contribution of Loss of Offsite Power to, in general, BWR core damage frequency (CDF) and also to the RBS CDF, which lessens the importance of feedwater as an injection source. Thus, the conclusions of the risk assessments discussed in NEDC-32988-A are unaffected.

3.4.7 LCO 3.6.4.1: Secondary Containment - Operating

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

LCO: The shield building and auxiliary building shall be OPERABLE.

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

Modification for End State Required Actions: Required Action B.2 is deleted allowing the plant to stay in Mode 3 while completing repairs.

Assessment: This LCO entry condition does not include gross leakage through an unisolable release path. The BWROG concluded in NEDC-32988-A, Revision 2 that previous generic PRA work related to Appendix J requirements has shown that containment leakage is not risk significant. The primary containment and all other primary and secondary containment-related functions would still be operable, including the standby gas treatment system, thereby minimizing the likelihood of an unacceptable release. By remaining in Mode 3, HPCS, RCIC, and the power conversion system (condensate/feedwater) remain available for water makeup and decay heat removal. Additionally, the plant EOPs direct the operators to take control of the depressurization function if low-pressure injection/spray are needed for RCS makeup and cooling. Therefore, the NRC staff concludes that the change is acceptable because defense-in-depth is improved with respect to water makeup and decay heat removal by remaining in Mode 3.

Note that the NRC staff's approval relies upon the primary containment, and all other primary and secondary containment-related functions to still be operable, including the standby gas treatment system, for maintaining defense-in-depth while in this reduced end state.

3.4.8 LCO 3.6.4.3: Standby Gas Treatment (SGT) System

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

LCO: Two SGT subsystems shall be OPERABLE.

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

Modification for End State Required Actions: Required Action B.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs. New Condition C is added to address two SGT subsystems inoperable consistent with revised Condition B. Required Action C.1 will allow the plant to stay in Mode 3 while competing repairs."

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

Section 5.1 of the NRC staff's September 27, 2002, SE for TR NEDC-32988-A (Reference 13) evaluates the NRC staff's risk basis for approval of TS 4.5.1.13, TS 4.5.2.11, and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System." According to this evaluation, which applies to BWR-6 design, (RBS is a BWR-6 facility), staying in Mode 3 instead of going to Mode 4 to repair the SGT system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 of the staff's SE for the TR (Reference 13) details a comparison between the Mode 3 and the Mode 4 end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure, and to mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable SGT system. Therefore, the NRC staff concludes that the change is acceptable.

3.4.9 LCO 3.7.1: Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)

The SSW system (in conjunction with the UHS) is designed to provide cooling water for the removal of heat from certain safe shutdown-related equipment heat exchangers following a DBA or transient.

LCO: Two SSW subsystems and the UHS shall be OPERABLE.

Condition Requiring Entry into End State: If one division with one UHS cooling tower fan is inoperable, the cooling tower fan(s) must be restored to operable status within 30 days (Required Action A.1). Similarly, Conditions A through G concern inoperability of SSW and UHS equipment as specified in the LCO. Condition H requires that if the required action(s) and associated completion time(s) cannot be met, the plant must be placed in Mode 3 within 12 hours (Required Action H.1) and in Mode 4 within 36 hours (Required Action H.2).

Note: The licensee's application provides a comparison of RBS TS LCO 3.7.1 Conditions versus those specified for the BWR-6 STS LCO 3.7.1. STS LCO Conditions are bracketed as below.

[BWR-6 STS LCO 3.7.1 Condition Requiring Entry into End State is as follows:

> If one or more cooling towers with one cooling tower fan is inoperable, the cooling tower fan(s) must be restored to operable status within seven days (Required Action A.1). If one SSW subsystem is inoperable for reasons other than Condition A, the SSW subsystem must be restored to operable status within 72 hours (Required Action B.1). If the required action(s) and associated completion time(s) cannot be met, the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).]

Modification for End State Required Actions: Regarding proposed modification for end-state changes to LCO 3.7.1, the licensee's application states,

> Changes to RBS TS 3.7.1 are needed to incorporate TSTF-423 line item TS 3.7.1. These changes are consistent with TSTF-423 but require modification to the standard due to the RBS current licensing basis.
>
> The proposed TS for RBS will separate the shutdown Required Actions into one addressing issues with a single division, revised Required Action H, and one addressing issues with two division, new Required Action I. This allows the single division actions to be limited to Mode 3 while the remainder of the issues being addressed by the new Required Action and including Mode 4 as an end state. A description of changes to the TS is as follows:
>
> Condition H will be revised to address conditions for one division of Standby Service Water (SSW)/Ultimate Heat Sink (UHS) inoperable, RBS items A, E, or G not met. This will be consistent with TSTF revised Condition C.

A new Condition I will be added to address conditions for both division of SSW/UHS inoperable, RBS items B, D, or F not met. This will be consistent with TSTF-423 TS 3.7.1 revised Condition E. Conditions addressing "Both SSW subsystems inoperable for reasons other than Condition F" and "Three or four UHS cooling tower fan cells inoperable" will also be addressed by this Condition."

[BWR-6 STS LCO 3.7.1 Modification for End State Required Actions is as follows:

Maintain the existing second and third conditions of Condition H unchanged by transferring them to a new Condition I (with Required Actions I.1 and I.2) and delete Required Action H.2.]

Assessment: The NRC has determined that the licensee's proposed plant-specific changes to TS LCO 3.7.1 are consistent with the NRC-approved TSTF-423 for BWR-6 STS LCO 3.7.1.

The BWROG performed a comparative PRA evaluation (Reference 4 of the core damage risks when operating in the current end state versus the proposed Mode 3 end state. The results indicated that the core damage risks while operating in Mode 3 (assuming the individual failure conditions) are lower or comparable to the current end state. By remaining in Mode 3, HPCS, RCIC, and the power conversion system (condensate/feedwater) remain available for water makeup and decay heat removal. Additionally, the EOPs direct the operators to take control of the depressurization function if low-pressure injection/spray is needed for RCS makeup and cooling. Therefore, the NRC staff concludes that the change is acceptable because defense-in-depth is improved with respect to water makeup and decay heat removal by remaining in Mode 3, and the required safety function can still be performed with the RHRSW subsystem components that are still operable.

3.4.10 LCO 3.7.2: Control Room Fresh Air (CRFA) System

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

LCO: Two CRFA subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one CRFA subsystem is inoperable, it must be restored to operable status within 7 days (Required Action A.1). If one or more CRFA subsystems are inoperable due to inoperable control room boundary in MODE 1, 2, or 3, initiate action to implement mitigating actions immediately (Required Action B.1), and verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits within 24 hours (Required Action B.2) and restore the CRE boundary to OPERABLE status within 90 days (Required Action B.3). If the CRFA subsystems cannot be restored to operable status within the allotted time, the plant must be placed in Mode 3 within 12

hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2). If two CRFA subsystems or a non-redundant component or portion of the CRFA System is inoperable in Mode 1, 2, or 3, for reasons other than Condition B, LCO 3.0.3 must be entered immediately (Required Action E.1).

Modification for End State Required Actions: Delete Required Action C.2, and change Required Action E.1 to "Be in Mode 3," with a Completion Time of "12 hours."

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

Section 5.1 of the NRC staff's September 27, 2002, SE of TR NEDC-32988-A (Reference 13) summarizes the staff's risk basis for approval of TS 4.5.1.16, and LCO 3.7.4, "Main Control Room Environmental Control (MCREC) System," (MCREC is similar to the RBS CRFA system). The basis for staying in Mode 3 instead of going to Mode 4 to repair the MCREC system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 of the staff's SE of the TR (Reference 13) makes a comparison between the Mode 3 and the Mode 4 end state with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure, and to mitigate radiation releases. The risk and defense-in-depth arguments, used according to the integrated decision-making process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable MCREC or CRFA system. Therefore, the NRC staff concludes that the change is acceptable.

3.4.11 LCO 3.7.3: Control Room Air Conditioning (AC) System

The control room AC system provides temperature control for the control room following control room isolation during accident conditions.

The licensee's June 13, 2013, application provides the following clarification,

> The discussion regarding Control Room Air Conditioning (CRAC), NUREG-1434 TS 3.7.3) discusses that this is a non-risk significant system for most BWR's. For River Bend, the OPERABILITY of this system is impacted through interlocks to Switchgear Room cooling, which is another subsystem of the overall Control Building HVAC system (HVC) and which is a risk significant function. However, the logic supporting the proposed changes for CRAC remains valid even with consideration of the need for Switchgear Room cooling at River Bend.

LCO: Two control room AC subsystems shall be OPERABLE.

Condition Requiring Entry into End State: If one control room AC subsystem is inoperable, it must be restored to operable status within 30 days (Required Action A.1). If two control room AC subsystems are inoperable, verify control room area temperature ≤ 104°F once per 4 hours and restore one control room AC subsystem to operable status within 7 days (Required Actions B.1 and B.2). If the required actions and associated completion times cannot be met (Condition C), the plant must be placed in Mode 3 within 12 hours (Required Action C.1) and in Mode 4 within 36 hours (Required Action C.2).

Modification for End State Required Actions: Required Action C.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs.

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

Section 5.1 of the NRC staff's September 27, 2002, SE of TR NEDC-32988-A (Reference 13) summarizes the staff's risk basis for approval of TS 4.5.2.15 and LCO 3.7.4, "Control Room Air Conditioning (CRAC) System." (Per the licensee's application, CRAC is similar to the RBS TS Control Room AC System.) The basis for staying in Mode 3 instead of going to Mode 4 to repair the CRAC system (one or both trains) is supported by defense-in-depth considerations. Section 5.2 of the staff's SE (Reference 13) makes a comparison between the Mode 3 and the Mode 4 end states, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure, and to mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable control room AC system. Therefore, the NRC staff concludes that the change is acceptable.

3.4.12 LCO 3.7.4: Main Condenser Offgas (MCOG)

The offgas from the main condenser normally includes radioactive gases. The gross gamma activity rate is controlled to ensure that accident analysis assumptions are satisfied and that offsite dose limits will not be exceeded during postulated accidents. The MCOG gross gamma activity rate is an initial condition of a DBA that assumes a gross failure of the MCOG system pressure boundary.

LCO: The gross gamma activity rate of the noble gases measured prior to the holdup pipe shall be ≤ 290 mCi [microcuries]/second after decay of 30 minutes.

Condition Requiring Entry into End State: If the gross radioactivity rate of the noble gases not within limits (Condition A), the radioactivity rate of the noble gases must be restored to within limits within 72 hours (Required Action A.1). If the Required Action and associated Completion Time cannot be met (Condition B), one of the following must occur:

a. All main steam lines must be isolated within 12 hours (Required Action B.1),

or

b. The steam jet air ejector (SJAE) must be isolated within 12 hours (Required Action B.2),

or

c. The plant must be placed in Mode 3 within 12 hours (Required Action B.3.1) and in Mode 4 within 36 hours (Required Action B.3.2).

Modification for End State Required Actions: Required Action B.3.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs. Required Action B.3.1 is renumbered to Required Action B.3.

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

Section 5.1 of the NRC staff's September 27, 2002, SE of TR NEDC-32988-A (Reference 13) summarizes the staff's risk basis for approval of TR Section 4.5.1.18 and LCO 3.7.6 (equivalent to RBS TS LCO 3.7.4) "Main Condenser Offgas." Staying in Mode 3 instead of going to Mode 4 to repair the MCOG system (one or both trains) is supported by defense-in-depth considerations. Section 5.2 of the staff's SE (Reference 13) makes a comparison between the Mode 3 and the Mode 4 end states, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure, and to mitigate radiation releases. The risk and defense-in-depth arguments, used according to the "integrated decision-making" process of RGs 1.174 and 1.177, support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable MCOG system. Therefore, the NRC staff concludes that the change is acceptable.

3.4.13 LCO 3.8.1: AC Sources - Operating

The unit Class 1E alternating current (AC) Electrical Power Distribution System AC sources consist of the offsite power sources and the onsite standby power sources (diesel generators (DGs) 1A, 1B, and 1C). The Class 1E AC distribution system supplies electrical power to three divisional load groups, with each division powered by an independent Class 1E 4.16 kiloVolt (kV) engineered safety feature (ESF) bus. Each ESF bus has two separate and independent offsite sources of power. Each ESF bus has a dedicated onsite DG. The ESF systems of any two of the three divisions provide for the minimum safety functions necessary to shut down the unit and maintain it in a safe shutdown condition.

Offsite power is supplied to the switchyard from the transmission network. From the switchyard two electrically and physically separated circuits provide AC power to each 4.16 kV ESF bus. The offsite AC electrical power sources are designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions.

LCO: The following AC electrical power sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electric Power Distribution System; and

b. Three emergency diesel generators (EDGs).

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours (Required Action F.1) and Mode 4 within 36 hours (Required Action F.2) following the sustained inoperability of either or both required offsite circuits; one or two required EDGs; or one required offsite circuit and one or two required EDGs.

Modification for End State Required Actions: Required Action F.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs. The plant will remain in Mode 3 (hot shutdown) (Required Action F.1).

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

In NEDC-32988-A, Revision 2 (Reference 4), the BWROG performed a comparative PRA evaluation of the core damage risks of operation in the current end state and in the Mode 3 end state. Events initiated by the loss-of-offsite power are dominant contributors to CDF in most BWR PRAs, and the high-pressure core cooling systems (RCIC and HPCS) play a major role in mitigating these events. The conclusion described in the NRC staff's September 27, 2002, SE of TR NEDC-32988-A (Reference 13) on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4 for inoperable AC power sources. Going to Mode 4 for one inoperable AC power source would cause loss of high-pressure RCIC system and loss of the power conversion system (condenser/feedwater), and would require activating

the RHR system. In addition, plant EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the AC power and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are lower than going to the Mode 4 end state; therefore, the NRC staff concludes that the change is acceptable.

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

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. The DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The 125 Volts direct current (VDC) electrical power system consists of three independent Class 1E DC electrical power subsystems, Divisions I, II, and III. Each subsystem consists of a battery, associated battery charger(s), and all the associated control equipment and interconnecting cabling.

LCO: For Modes 1, 2, and 3, the Division I, Division II, and Division III DC electrical power subsystems shall be OPERABLE.

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours (Required Action D.1) and Mode 4 within 36 hours (Required Action D.2), if Required Actions and Associated Completion Time not met.

Modification for End State Required Actions: The TS change is to remove the requirement to place the plant in Mode 4 for Required Actions and Completion Times for Condition A, B, or C not met for Division I and II DC electrical power subsystems. Required Action D.2 is deleted, allowing the plant to stay in Mode 3 while completing repairs. New Condition E is added to maintain previous Actions for the Division III DC electrical power subsystem.

Assessment: If one of the DC electrical power subsystems is inoperable, the remaining DC electrical power subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. In NEDC-32988-A, Revision 2 (Reference 4), the BWROG performed a comparative PRA evaluation of the core damage risks of operation in the current end state and in the Mode 3 end state, with one DC system inoperable. Events initiated by the loss-of-offsite power are dominant contributors to CDf in most BWR PRAs, and the high-pressure core cooling systems, RCIC and HPCS, play a major role in mitigating these events. The NRC staff's conclusion, described in the NRC's September 27, 2012, SE for TR NEDC-32988-A (Reference 13) on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4. Going to Mode 4 for one inoperable DC power source would cause loss of the RCIC system, and loss of the power conversion system (condenser/feedwater), and would require activating the RHR system. In addition, plant EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the DC power and the number of systems available in Mode 3, the NRC staff concludes in the SE for the BWR topical report that the risk of staying in

Mode 3 are approximately the same or in some cases lower than the risk of going to the Mode 4 end state; therefore, the NRC staff concludes that the change is acceptable.

3.4.15 LCO 3.8.7: Inverters–Operating

At RBS, the inverters are the preferred source of power for the AC vital buses because of the stability and reliability they achieve. There are two inverters for Division I and two inverters for Division II, making a total of four inverters. The function of the inverter is to provide AC electrical power to the vital buses. The inverters are powered from both AC and DC sources.

In its letter dated June 13, 2013, the licensee noted, in part, that

> Changes to RBS TS 3.8.7 are limited to Division 1 and 2 only. RBS Division 3 has no inverters for safety related functions. Therefore, requirement to shutdown due to an inoperable inverter is not required.

LCO: For Modes 1, 2, and 3, the Division I and Division II inverters shall be OPERABLE.

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours (Required Action B.1) and Mode 4 within 36 hours (Required Action B.2) following the sustained inoperability of the required inverter for a period of 24 hours.

Modification for End State Required Actions: The proposed TS change is to remove the requirement to place the plant in Mode 4. The Required action in B.2 is deleted.

Assessment: If one of the inverters is inoperable, the remaining inverter has the capacity to support a safe shutdown and to mitigate an accident condition. In NEDC-32988-A, Revision 2 (Reference 4), the BWROG performed a comparative PRA evaluation of the core damage risks of operation in the current end state and in the Mode 3 end state, with one of the AC/DC subsystems inoperable. Events initiated by the loss-of-offsite power are dominant contributors to CDF in most BWR PRAs, and the high-pressure core cooling systems, RCIC and HPCS, play a major role in mitigating these events. The NRC staff's conclusion, described in the September 27, 2002, SE for TR NEDC-32988-A (Reference 13) on BWROG's PRA evaluation, indicates that the core damage risks are lower in Mode 3 than in Mode 4. Going to Mode 4 for one inoperable AC/DC subsystem would cause loss of the RCIC system, and loss of the power conversion system (condenser/feedwater), and would require activating the RHR system. In addition, plant EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the inverters during the infrequent and limited time in Mode 3 and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are approximately the same as and in some cases lower than the risks of going to the Mode 4 end state; therefore, the NRC staff concludes that the change is acceptable.

3.4.16 LCO 3.8.9 Distribution Systems - Operating

At RBS, the onsite Class 1E AC and DC electrical power distribution systems are divided by division into three independent AC and DC and two independent AC vital bus electrical power distribution subsystems.

The primary AC distribution system consists of each 4.16 kV ESF bus that has at least one separate and independent offsite source of power, as well as a dedicated onsite DG source.

The secondary plant AC distribution system includes 480 Volt (V) ESF load centers and associated loads, motor control centers, and transformers. In addition, RBS has three independent 125 VDC electrical power distribution subsystems.

LCO: For Modes 1, 2, and 3, Division I, Division II, and Division III AC and DC, and Division I and II AC vital bus electrical power distribution subsystems shall be OPERABLE.

Condition Requiring Entry into End State: The plant operators must bring the plant to Mode 3 within 12 hours and Mode 4 within 36 hours (Condition D) following the sustained inoperability of one or more Division I or II AC (Condition A) or AC vital bus distribution (Condition B) or DC electrical power distribution subsystems for a period of 8 hours (each for Condition A or Condition B) and 2 hours (Condition C), and 16 hours (each for Conditions A, B or C), respectively, from initial discovery of failure to meet the LCO.

Modification for End State Required Actions: Required Action D.2 is deleted allowing the plant to stay in Mode 3 while completing repairs.

Assessment: If one of the AC/DC/AC vital subsystems is inoperable, the remaining AC/DC/AC vital subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. In NEDC-32988-A, Revision 2 (Reference 4), the BWROG did a comparative PRA evaluation of the core damage risks of operation in the current end state and in the proposed Mode 3 end state. Events initiated by the loss-of-offsite power are dominant contributors to CDF in most BWR PRAs, and the steam-driven core cooling systems Isolation Condenser (IC), RCIC and HPCS play a major role in mitigating these events. The evaluation indicates that the core damage risks are lower in Mode 3 than in Mode 4. Going to Mode 4 for one inoperable AC/DC vital power source would cause loss of the high-pressure steam-driven injection system (RCIC and HPCS), and loss of the power conversion system (condenser/feedwater), and require activating the RHR system. In addition, the EOPs direct the operator to take control of the depressurization function if low-pressure injection/spray systems are needed for RPV water makeup and cooling.

Based on the low probability of loss of the AC/DC/AC vital electrical subsystems during the infrequent and limited time in Mode 3 and the number of systems available in Mode 3, the NRC staff concludes that the risks of staying in Mode 3 are approximately the same as and, in some cases, lower than the risks of going to the Mode 4 end state; therefore, the NRC staff concludes that the change is acceptable.

3.5 Regulatory Commitments and License Conditions

In its letter dated June 13, 2013, the licensee stated, in part, that

> As discussed in the notice of availability published in the *Federal Register* on February 18, 2011 for this TS improvement, plant-specific regulatory commitments are made as follows:
>
> - Entergy has previously committed to the guidance of NUMARC 93-01 Section 11, which provides guidance and details on the assessment and management of risk during maintenance. This commitment was included in the application for TSTF-427 and approved by the NRC in Amendment 173 therefore, no new commitment is required.
>
> - Entergy will follow the guidance established in TSTF-IG-05-02 "Implementation Guidance for TSTF-423, Revision 2, Technical Specification End States, NEDC-32988-A."

The NRC staff has determined that the actions above, proposed as regulatory commitments, are required for the implementation of TSTF-423 and are part of the basis for NRC staff approval of this license amendment. In its letter dated November 3, 2014, the licensee made the following regulatory commitment:

> - Entergy proposes to delete conditions 20 and 21 then replace 20 with new condition referencing the commitments required by the standard TSTS Safety Evaluation. These commitments will be included in USAR Section 16.

which adds the prior and current commitments made in the letter dated February 18, 2011, to the RBS USAR upon implementation of the amendment but will not be reflected in the USAR until the next periodic update. License Condition 20 requiring the licensee to add these commitments to the USAR is described on the amendment issuance authority page. Any future changes to these actions would require application of the criteria defined in 10 CFR 50.59. As stated in Section 2.0 of this safety evaluation, by letter dated August 28, 2014, Entergy confirmed that it meets and is committed to the guidelines of the current NUMARC 93-01, Revision 4A for Maintenance Rule risk assessments.

3.6 Administrative Changes to the License

In its November 3, 2014 letter, the licensee proposed to remove Conditions 20 and 21 from the license as they refer to past operating cycles (14^{th} and 15^{th}, respectively). RBS is currently in Cycle 18. The NRC staff has concluded that Conditions 20 and 21, which were relevant to past operating cycles, are no longer applicable and will be deleted.

3.7 TS Bases Change

Attachment 3 to the LAR, the licensee identified changes to the TS Bases for the proposed amendment. In identifying changes to the TS Bases, the licensee is not requesting that the

NRC approve these changes to the TS Bases. The identified changes to the TS Bases come under TS 5.5.11, "Technical Specifications (TS) Bases Control Program," which states, in part, that:

> Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
>
> 1. A change in the TS incorporated in the license; or
>
> 2. A change to the USAR [Updated Safety Analysis Report] that involves an unreviewed safety question as defined in 10 CFR 50.59.

3.8 Summary

Based upon the above assessments, and because the time spent in Mode 3 to perform the repair on any of the systems described above would be infrequent and limited, and in light of defense-in-depth considerations (discussed above and in TR NEDC-32988-A, Revision 2 (Reference 4), and as evaluated by the NRC staff's associated safety evaluation dated September 27, 2002 (Reference 13), the NRC staff concludes that the proposed changes to the RBS TS described above are acceptable. The NRC staff also concludes that current license Conditions 20 and 21 are no longer relevant and can be deleted. New license Condition 20 regarding commitments required by standard TSTF safety evaluations will be added to the license as explained above.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana 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 the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the surveillance requirements. 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 as published in the *Federal Register* on August 20, 2013 (78 FR 51226). 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. Olson, E., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-423, "Technical Specifications End States," dated June 13, 2013 (ADAMS Accession No. ML13169A068).

2. Olson, E., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-423, "Technical Specifications End States," dated August 28, 2014 (ADAMS Accession No. ML14266A350).

3. Technical Specifications Task Force, letter to U.S. Nuclear Regulatory Commission, "Transmittal of Revised Risk-Informed End State Travelers," dated December 22, 2009 (ADAMS Accession No. ML093570241); includes TSTF-423, Revision 1, "Technical Specifications End States, NEDC-32988-A."

4. BWR Owners Group, NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," December 2002 (ADAMS Accession No. ML030170084).

5. U.S. Nuclear Regulatory Commission, NUREG-1433, Revision 4, "Standard Technical Specifications – General Electric Plants (BWR/4)," April 2012 (ADAMS Accession No. ML12104A192).

6. U.S. Nuclear Regulatory Commission, NUREG-1434, Revision 4, "Standard Technical Specifications – General Electric Plants (BWR/6)," April 2012 (ADAMS Accession No. ML12104A195).

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

8. Title 10 of the *Code of Federal Regulations,* Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants."

9. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," May 2000 (ADAMS Accession No. ML003699426).

10. Nuclear Management and Resource Council, NUMARC 93-01, Revision 3, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," July 2000 (ADAMS Accession No. ML031500684).

11. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.160, Revision 3, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," May 2012 (ADAMS Accession No. ML113610098).

12. Nuclear Management and Resource Council, NUMARC 93-01, Revision 4A, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," April 2011 (ADAMS Accession No. ML11116A198).

13. U.S. Nuclear Regulatory Commission, NRC Safety Evaluation for Topical Report NEDC-32988, Revision 2, dated September 27, 2002 (ADAMS Accession No. ML022700603).

14. BWR Owners Group, TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A," September 2005 (ADAMS Accession No. ML052700156).

15. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decision Making on Plant Specific Changes to the Licensing Basis," August 1998 (ADAMS Accession No. ML003740133).

16. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.177, "An Approach for Pant Specific Risk-Informed Decision Making: Technical Specifications," August 1998 (ADAMS Accession No. ML003740176).

17. Olson, E., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-423, 'Technical Specifications End States,'" dated November 3, 2014 (ADAMS Accession No. ML14338A867).

18. Olson, E., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Changes; Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-423, 'Technical Specifications End States,'" dated January 22, 2015 (ADAMS Accession No. ML15027A183).

Principal Contributors: R. Grover
A. Wang

Date: February 27, 2015.

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

Sincerely,

/RA/

Alan B. Wang, Project Manager
Plant Licensing IV-2 and Decommissioning
Transition Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures:
1. Amendment No. 185 to NPF-47
2. Safety Evaluation

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RGrover, NRR/DSS/STSB

ADAMS Accession No. ML14106A167

OFFICE	NRR/DORL/LPL4-2/PM	NRR/DORL/LPL4-2/LA	NRR/DSS/STSB/BC
NAME	AWang	JBurkhardt	REIliott*
DATE	9/25/14	9/16/14	4/4/14
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NAME	JLindell	DBroaddus	ABWang
DATE	11/25/14	2/27/15	2/17/15

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