



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

January 5, 2011

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:
TECHNICAL SPECIFICATION TASK FORCE (TSTF) IMPROVED STANDARD
TECHNICAL SPECIFICATIONS CHANGE TRAVELER, TSTF-484, "USE OF
TS 3.10.1 FOR SCRAM TIME TESTING ACTIVITIES" (TAC NO. ME4431)

Dear Sir or Madam:

The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 170 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 July 22, 2010.

The amendment revises Limiting Condition for Operation (LCO) 3.10.1, "Inservice Leak and Hydrostatic Testing Operation," and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 degrees Fahrenheit as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. The change is consistent with NRC-approved Technical Specification Task Force (TSTF) Improved Standard Technical Specifications Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities," that was announced in the *Federal Register* on October 27, 2006 (71 FR 63050), as part of the Consolidated Line Item Improvement Process.

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,

A handwritten signature in black ink that reads "Alan Wang".

Alan B. Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures:

1. Amendment No. 170 to NPF-47
2. Safety Evaluation

cc w/encls: Distribution via Listserv



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

ENERGY GULF STATES LOUISIANA, LLC

AND

ENERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 170
License No. NPF-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 22, 2010, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

Enclosure 1

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-47 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 170 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.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-47 and
Technical Specifications

Date of Issuance: January 5, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 170

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

<u>Remove</u>	<u>Insert</u>
-3-	-3-

Technical Specifications

<u>Remove</u>	<u>Insert</u>
3.10-1	3.10-1

- (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. 170 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.

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended, to allow reactor coolant temperature > 200°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment and Fuel Building Isolation Instrumentation," Functions 1, 2, and 5 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment - Operating";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs) and Fuel Building Isolation Dampers (FBIDs)";
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System"; and
- e. LCO 3.6.4.5, "Fuel Building."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 200°F.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 170 TO

FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By application dated July 22, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102100188), Entergy Operations, Inc. (the licensee), requested changes to the Technical Specifications (TSs) for the River Bend Station, Unit 1 (RBS).

The proposed changes would revise Limiting Condition for Operation (LCO) 3.10.1, "Inservice Leak and Hydrostatic Testing Operation," and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 degrees Fahrenheit (°F) as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. The change is consistent with U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force (TSTF) Improved Standard Technical Specifications Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities," that was announced in the *Federal Register* on October 27, 2006 (71 FR 63050), as part of the Consolidated Line Item Improvement Process.

2.0 REGULATORY EVALUATION

2.1 Inservice Leak and Hydrostatic Testing

The Reactor Coolant System (RCS) serves as a pressure boundary and also serves to provide a flow path for the circulation of coolant past the fuel. In order to maintain RCS integrity, Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requires periodic hydrostatic and leakage testing. Hydrostatic tests are required to be performed once every 10 years and leakage tests are required to be performed each refueling outage. The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix G, "Fracture Toughness Requirements," state that pressure tests and leak tests of the reactor vessel that are required by Section XI of the ASME Code must be completed before the core is critical.

NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/4," and NUREG-1434, Revision 3, "Standard Technical Specifications, General Electric Plants, BWR/6" (STSS), currently contain LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation." LCO 3.10.1 was created to allow for hydrostatic and leakage testing to be conducted while in Mode 4, with an average reactor coolant temperature greater than 200 °F, provided certain secondary containment LCOs are met.

TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," modifies LCO 3.10.1 to allow a licensee to implement LCO 3.10.1, while hydrostatic and leakage testing is being conducted, should average reactor coolant temperature exceed 200 °F during testing. This modification does not alter current requirements for hydrostatic and leakage testing as required by Appendix G to 10 CFR Part 50.

2.2 Control Rod Scram Time Testing

Control rods function to control reactor power level and to provide adequate excess negative reactivity to shut down the reactor from any normal operating or accident condition at any time during core life. The control rods are scrammed by using hydraulic pressure exerted by the control rod drive (CRD) system. General Design Criterion (GDC) 10, "Reactor Design," of Appendix A to 10 CFR Part 50 states that:

The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

The scram reactivity used in design-basis accidents and transient analyses is based on an assumed control rod scram time.

The STSS (NUREG-1433 and NUREG-1434) currently contain surveillance requirements (SRs) to conduct scram time testing when certain conditions are met in order to ensure that GDC 10 is satisfied. SR 3.1.4.1 requires scram time testing to be conducted following a shutdown greater than 120 days while SR 3.1.4.4 requires scram time testing to be conducted following work on the CRD system or following fuel movement within the affected core cell. Both SRs must be performed at reactor steam dome pressure greater than or equal to 950 pounds per square gauge (psig) and prior to exceeding 40 percent rated thermal power (RTP).

TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," would modify LCO 3.10.1 to allow SR 3.1.4.1 and SR 3.1.4.4 to be conducted in Mode 4 with average reactor coolant temperature greater than 200 °F. Scram time testing would be performed in accordance with LCO 3.10.4, "Single Control Rod Withdrawal - Cold Shutdown." This modification to LCO 3.10.1 does not alter the means of compliance with GDC 10 of Appendix A to 10 CFR Part 50.

3.0 TECHNICAL EVALUATION

The existing provisions of LCO 3.10.1 allow for hydrostatic and leakage testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, while imposing Mode 3 secondary containment requirements. Under the existing provision, LCO 3.10.1 would have to be implemented prior to hydrostatic and leakage testing. As a result, if LCO 3.10.1 was not implemented prior to hydrostatic and leakage testing, the hydrostatic and leakage testing would have to be terminated if average reactor coolant temperature exceeded 200 °F during the conduct of the hydrostatic and leakage test. TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," modifies LCO 3.10.1 to allow a licensee to implement LCO 3.10.1, while hydrostatic and leakage testing is being conducted, should average reactor coolant temperature exceed 200 °F during testing. The modification will allow completion of testing without the potential for interrupting the test in order to reduce reactor vessel pressure, cool the RCS, and restart the test below 200 °F. Since the current LCO 3.10.1 allows testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, the proposed change does not introduce any new operational conditions beyond those currently allowed.

SR 3.1.4.1 and SR 3.1.4.4 require that control rod scram time be tested at reactor steam dome pressure greater than or equal to 950 psig and before exceeding 40 percent RTP. Performance of control rod scram time testing is typically scheduled concurrent with inservice leak or hydrostatic testing while the RCS is pressurized. Because of the number of control rods that must be tested, it is possible for the inservice leak or hydrostatic test to be completed prior to completing the scram time test. Under existing provisions, if scram time testing cannot be completed during the LCO 3.10.1 inservice leak or hydrostatic test, scram time testing must be suspended. Additionally, if LCO 3.10.1 is not implemented and average reactor coolant temperature exceeds 200 °F while performing the scram time test, scram time testing must also be suspended. In both situations, scram time testing is resumed during startup and is completed prior to exceeding 40 percent RTP. TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," modifies LCO 3.10.1 to allow a licensee to complete scram time testing initiated during inservice leak or hydrostatic testing. As stated earlier, since the current LCO 3.10.1 allows testing to be conducted while in Mode 4 with average reactor coolant temperature greater than 200 °F, the proposed change does not introduce any new operational conditions beyond those currently allowed. Completion of the scram time testing, prior to reactor criticality and power operations, results in a more conservative operating philosophy with attendant potential safety benefits.

It is acceptable to perform other testing concurrent with the inservice leak or hydrostatic test provided that this testing can be performed safely and does not interfere with the leak or hydrostatic test. However, it is not permissible to remain in TS 3.10.1 solely to complete such testing following the completion of inservice leak or hydrostatic testing and scram time testing.

Since the tests are performed with the reactor pressure vessel nearly water solid, at low decay heat values, and near Mode 4 conditions, the stored energy in the reactor core will be very low. Small leaks from the RCS would be detected by inspections before a significant loss of inventory occurred. In addition, two low-pressure emergency core cooling systems (ECCS) injection/spray subsystems are required to be operable in Mode 4 by TS 3.5.2,

"ECCS-Shutdown." In the event of a large RCS leak, the reactor pressure vessel would rapidly depressurize and allow operation of the low pressure ECCS. The capability of the low-pressure ECCS would be adequate to maintain the fuel covered under the low decay heat conditions during these tests. Also, LCO 3.10.1 requires that secondary containment and standby gas treatment system be operable and capable of handling any airborne radioactivity or steam leaks that may occur during performance of testing.

The protection provided by the normally required Mode 4 applicable LCOs, in addition to the secondary containment requirements required to be met by LCO 3.10.1, minimizes potential consequences in the event of any postulated abnormal event during testing. In addition, the requested modification to LCO 3.10.1 does not create any new modes of operation or operating conditions that are not currently allowed. Therefore, the NRC staff concludes the proposed change acceptable.

4.0 REGULATORY COMMITMENT

In support of the proposed application, the licensee provided in its letter dated July 22, 2010, the following regulatory commitment:

Entergy will establish the Technical Specification Bases for LCO 3.10.1 as adopted with the applicable license amendment.

The licensee committed to complete this commitment within 60 days of the issuance of the TS amendment. The NRC concludes this commitment is acceptable.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding issued on October 5, 2010 (75 FR 61524). 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.

7.0 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) 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.

Principal Contributor: Aron Lewin

Date: January 5, 2011

January 5, 2011

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:
TECHNICAL SPECIFICATION TASK FORCE (TSTF) IMPROVED STANDARD
TECHNICAL SPECIFICATIONS CHANGE TRAVELER, TSTF-484, "USE OF
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Sincerely,
/RA/

Alan B. Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures:

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2. Safety Evaluation

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