

February 21, 2007

Mr. William R. Brian  
Vice President of Operations  
Grand Gulf Nuclear Station  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT  
RE: TECHNICAL SPECIFICATION (TS) TO ADOPT TASK FORCE  
(TSTF)-484, REVISION 0, "USE OF TS 3.10.1 FOR SCRAM TIME TESTING  
ACTIVITIES," USING THE CONSOLIDATED LINE ITEM IMPROVEMENT  
PROCESS (TAC NO. MD3578)

Dear Mr. Brian:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 172 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1 (GGNS). This amendment consists of changes to the TSs in response to your application dated November 13, 2006.

The amendment adopts the TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities," and revises GGNS TS Limiting Condition of Operation 3.10.1, and the associated TS Bases, to expand its scope to include provisions for temperature excursions greater than 200 °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.

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

Sincerely,

*/RA/*

Bhalchandra Vaidya, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures: 1. Amendment No. 172 to NPF-29  
2. Safety Evaluation

cc w/encls: See next page

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Bhalchandra Vaidya, Project Manager  
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**ADAMS Accession Nos. Pkg ML070250464** (Amendment ML070250445, TS ML070520620)

\*No significant change from SE Input Memo

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/ITSB/BC	OGC-NLO	NRR/LPL4/BC
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DATE	2/13/07	2/13/07	1/3/07	2/15/07	2/15/07

OFFICIAL RECORD COPY

ENERGY OPERATIONS, INC.  
SYSTEM ENERGY RESOURCES, INC.  
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION  
ENERGY MISSISSIPPI, INC.  
DOCKET NO. 50-416  
GRAND GULF NUCLEAR STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 172  
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated November 13, 2006, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications and paragraph 2.C.(2) of Facility Operating License No. NPF-29 as indicated in the attachment to this license amendment.
3. This 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

*/RA/*

David Terao, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility  
Operating License No. NPF-29  
and the Technical Specifications

Date of Issuance: February 21, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 172

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of Facility Operating License NPF-29 and the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

<u>Remove</u>	<u>Insert</u>
Page 4	Page 4

Technical Specifications

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 172 TO

FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By application dated November 13, 2006 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML063240095), Entergy Operations, Inc., et al. (the licensee), requested changes to the Technical Specifications (TSs) for Grand Gulf Nuclear Station, Unit 1 (GGNS).

The proposed changes are based on TS Task Force (TSTF)-484, Revision 0, that has been approved generically for the boiling-water reactor (BWR) Standard TS, NUREG-1433 (BWR/4) and NUREG-1434 (BWR/6). These changes revise GGNS TS Limiting Condition of Operation (LCO) 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 °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. A notice announcing the availability of this proposed TS change using the consolidated line item improvement process was published in the Federal Register on November 27, 2006 (71 FR 68642).

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. Appendix G to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR) states 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, "Standard Technical Specifications General Electric Plants, BWR [Boiling-Water Reactor]/4," Revision 3, and NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 3, both 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 average reactor coolant temperature greater than 200 °F provided certain secondary containment LCOs are met.

TSTF-484, Revision 0, 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 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.

NUREG-1433, Revision 3, and NUREG-1434, Revision 3, both 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 inch gauge (psig) and prior to exceeding 40-percent rated thermal power (RTP).

TSTF-484, Revision 0, 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.

## 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, hydrostatic and leakage testing would have to be terminated if average reactor coolant temperature exceeded 200 °F during the testing. TSTF-484, Revision 0, 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. As discussed in the TSTF SE, 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.

The current SR 3.1.4.1 and SR 3.1.4.4 for GGNS 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, modifies LCO 3.10.1 to allow a licensee to complete scram time testing initiated during inservice leak or hydrostatic testing. As stated earlier (and as discussed in the TSTF SE), 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 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 (RPV) 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 would occur. 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 RPV 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. The NRC staff has determined that no factors specific to GGNS change the applicability of the TSTF SE analysis with respect to the proposed changes. Therefore, the NRC staff finds the proposed changes to be acceptable.

#### 4.0 STATE CONSULTATION

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

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published on December 19, 2006 (71 FR 75993). 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

#### 7.0 REFERENCES

1. NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Revision 3, August 31, 2003.
2. NUREG-1434, Standard Technical Specifications General Electric Plants, BWR/6," Revision 3, August 31, 2003.
3. Request for Additional Information (RAI) Regarding TSTF-484, April 7, 2006, ADAMS Accession No. ML060970568.
4. Response to NRC RAIs Regarding TSTF-484, June 5, 2006, ADAMS Accession No. ML061560523.
5. TSTF-484 Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities", May 5, 2005, ADAMS Accession No. ML052930102.
6. TSTF Response to NRC Notice for Comment, September 20, 2006, ADAMS Accession No. ML062650171.

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Date: February 21, 2007

Grand Gulf Nuclear Station

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November 2006