

October 26, 2004

Mr. Joseph E. Venable  
Vice President Operations  
Entergy Operations, Inc.  
17265 River Road  
Killona, LA 70066-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 (WATERFORD 3) -  
REQUEST FOR ADDITIONAL INFORMATION RELATED TO REVISION TO  
FACILITY OPERATING LICENSE AND TECHNICAL SPECIFICATIONS -  
EXTENDED POWER UPRATE REQUEST (TAC NO. MC1355)

Dear Mr. Venable:

By application dated November 13, 2003, and supplemented by letters dated January 29, March 4, April 15, May 7, May 12, May 13, May 21, May 26, July 14, July 15, July 28, August 10, August 19, August 25, September 1, September 14, October 8 (2 letters), October 13, October 18, and October 19, 2004, Entergy Operations, Inc., requested changes to the Facility Operating License and Technical Specifications for the Waterford Steam Electric Station, Unit 3, which would allow an increase in the rated thermal power from 3,441 megawatts thermal (MWt) to 3,716 MWt.

After reviewing your request, the Nuclear Regulatory Commission staff has determined that additional information is required in the area of transient testing to complete the review. We discussed this information with your staff by telephone and they agreed to provide the additional information requested in the enclosure within 15 days of receipt of this letter.

If you have any questions, please call me at (301) 415-1480.

Sincerely,

**/RA/**

N. Kalyanam, Project Manager, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure: Request for Additional Information

cc w/encl: See next page

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JTatum/ASStubbs

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Accession No.: ML043100611

\* RAI input from the staff without any major change

OFFICE	PDIV-1/PM	PDIV-1/LA	DSSA/SPIB/A	LPM-Power Uprate	PDIV-1/SC(A)
NAME	NKalyanam	DJohnson	JTatum/ASStubbs*	JStang	DJaffe for MWebb
DATE	10/21/04	10/21/04	10/15/04	10/24/04	10/26/04

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REQUEST FOR ADDITIONAL INFORMATION

ENTERGY OPERATIONS, INC. (ENTERGY)

WATERFORD STEAM ELECTRIC STATION, UNIT 3 (WATERFORD 3)

DOCKET NO. 50-382

In general, the NRC staff does not review and approve the application of computer codes and analyses that are credited for evaluating balance-of-plant performance and primary/secondary interactions. Consequently, the startup test program is relied upon as a quality check to: a) confirm that analyses and any modifications and adjustments that are necessary for a proposed extended power uprate (EPU) have been completed properly, and b) benchmark the analyses against the actual integrated performance of the plant, thereby assuring conservative results. This is consistent with the requirements stated in Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, which states that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate calculational methods, or by the performance of a suitable testing program; and requires that design changes be subject to design control measures commensurate with those applied to the original plant design (which includes startup testing).

In order to implement the proposed EPU at Waterford 3, the main steam system will operate at a lower pressure and higher mass flow rate, with corresponding operating conditions for the main feedwater system. In order to accommodate these revised operating conditions, the following changes are necessary:

- a. The reactor power cutback system will be put in service at 65 percent power (instead of the current 70 percent), and the reactor trip on turbine trip setpoint will be reduced to 65 percent, to compensate for the relative reduction in the capacity of the steam bypass control system (SBCS).
- b. Changes to the controllers and/or setpoints of the atmospheric dump valves (ADVs) are being made in order to maintain adequate margin between the actuation setpoints for the SBCS and the ADVs, providing assurance that the ADVs will not actuate prematurely (the SBCS is relied upon to prevent unnecessary challenges to the ADVs).
- c. A new high pressure main turbine rotor with all reaction blading is being installed, potentially affecting the inertia of the main turbine and overshoot during a turbine overspeed transient, such as during a loss-of-load.
- d. Modifications to various control systems and setpoints will be required to ensure that the plant will be maintained within desired operating bands during normal operations and during minor load changes and load rejection events.

Entergy's test program primarily includes steady-state testing with some minor load changes, and no large-scale transient testing is proposed. Sufficient information has not been provided to demonstrate that, in the absence of large-scale transient testing, the integrated plant response during transient conditions will be as expected. Entergy is, therefore, requested to either: a. provide additional information that explains in detail how the proposed EPU startup

ENCLOSURE

test program, in conjunction with the original Waterford 3 startup test results and applicable industry experience, assure the plant will respond as expected during postulated transient conditions following implementation of the proposed EPU, given the revised operating conditions that will exist and plant changes that are being made; or b. describe transient testing that will be included in the startup test program in order to provide this assurance, and explain in detail how the proposed transient testing will accomplish this.

ENCLOSURE

Waterford Steam Electric Station, Unit 3

cc:

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