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Waterford 3

W3F1-2002-0006

January 16, 2002

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

SUBJECT: Waterford Steam Electric Station, Unit 3  
Docket No. 50-382  
Technical Specification Change Request, NPF-38-238  
Appendix K Margin Recovery – Power Uprate Request  
Response to Requests for Additional Information

REFERENCES:

1. Entergy letter dated September 21, 2001, TSCR 38-238, "Appendix K Margin Recovery – Power Uprate Request"
2. NRC RAI dated November 6, 2001 (I&C Branch)
3. NRC RAI dated November 8, 2001 (Electrical Branch & Radiological Consequences)
4. NRC RAI dated November 28, 2001 (Human Performance Branch)
5. NRC RAI dated December 21, 2001 (Material & Chemical Engineering, Mechanical and Civil Engineering, and Reactor Systems Branches)
6. Entergy letter dated December 10, 2001, TSCR 38-238, Response to Requests for Additional Information

Dear Sir or Madam:

In accordance with 10CFR50.90, Entergy Operations, Inc. (Entergy) submitted, by letter dated September 21, 2001 (Reference 1), a request for changes to the Waterford Steam Electric Station, Unit 3 (Waterford 3) Operating License and Technical Specifications associated with an increase in the licensed power level. The changes involve a proposed increase in the power level from 3,390 MWt to 3,441 MWt representing a measurement uncertainty recapture power uprate. The NRC Staff has returned four Requests for Additional Information (RAI) (References 2-5). Entergy provided a response to the first two RAIs in Reference 6. The response to the Human Performance Branch RAI (Reference 4) is provided in Attachment 1.

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The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The attached responses do not impact that conclusion.

Entergy requests that the effective date for this TS change to be within 60 days of startup from Refueling Outage (RF) 11. Although this request is neither exigent nor emergency, your prompt review and approval prior to startup from RF 11 is requested. Entergy would like to implement the increased power level upon startup from our upcoming RF11 scheduled to start on March 22, 2002.

There are new commitments associated with the attached responses and these are listed in Attachment 2. A summary of the other commitments associated with the implementation of this request was provided in Attachment 4 of the September 21, 2001 letter. Should you have any questions or comments concerning this response, please contact Jerry Burford at (601) 368-5755.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 16, 2002.

Sincerely,



B. S. Allen  
Director, Engineering  
Waterford 3

BSA/FGB/cbh

Attachments:        1. Response to Request for Additional Information  
                             2. List of Regulatory Commitments

cc:     E.W. Merschoff, NRC Region IV  
         N. Kalyanam, NRC-NRR  
         J. Smith  
         N.S. Reynolds  
         NRC Resident Inspectors Office  
         Louisiana DEQ/Surveillance Division  
         American Nuclear Insurers

**Attachment 1**

**To**

**W3F1-2002-0006**

**Response to Requests for Additional Information  
Related to Power Uprate**

## **RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION**

By letter dated September 21, 2001, Entergy Operations, Inc. (the licensee), proposed a license amendment to change the Technical Specifications (TS) for Waterford Steam Electric Generating Station, Unit 3 (Waterford 3). The proposed amendment addresses modifications necessary to increase the rated thermal power of Waterford 3 from 3,390MWt to 3,441 MWt, an increase of 1.5%. These changes result from increased feedwater flow measurement accuracy to be achieved by utilizing high accuracy ultrasonic flow measurement instrumentation to be installed in the main feedwater system piping. The NRC staff has returned a request for additional information (RAI) in a letter dated November 28, 2001 (Human Performance Branch questions below). The response to this RAI is provided below.

### **Human Performance Branch**

1. Section 4.1.1, Simulator, states that "Physical changes (hardware) that affect the control room and the simulator will be implemented through plant approved change processes. Copies of these change processes are procedurally routed to the Training Department and the simulator personnel implement appropriate change."

Request: Please state whether the physical changes will be implemented before operation at power levels above the plant's current licensed power level. The staff understands the word "processes" as used in the second sentence quoted above to mean documentation packages controlling specific changes to the plant. Please verify this understanding or provide clarification.

Response:

Yes, the current implementation schedule for the simulator changes to reflect the power uprate modification includes a completion date prior to operation above the current licensed power level. See the response to Questions 3 and 6 below for additional information regarding the changes.

Yes, "processes" here refers to documentation packages controlling specific changes to the plant.

2. Section 4.1.1, Simulator, states that "The necessary procedures and training documents required for operation at the uprated power level with the new LEFM CheckPlus System will be identified in the design modification package."

Request: Please state whether these procedures will be developed and the training implemented before operation at power levels above the plant's current licensed power level.

Response:

The procedures described here are the same procedures as those described in Section 4.2.2 of the original submittal. See the response to question 5, which pertains to these same procedures. These procedures will be revised prior to operation at the uprated power conditions.

Training relative to the procedures will consist primarily of just-in-time training by shift briefing, required reading, or classroom sessions. This training will involve an overview of the modification, a description of what plant equipment and procedures are changing, and the calculated effects on the plant that are introduced by the modification (e.g., governor valve position, Steam Generator (SG) pressure, Reactor Coolant System (RCS) temperature requirements, actual power level, etc.). This training will be completed prior to operation at elevated power levels.

3. Section 4.1.1, Simulator, states that "The implementation of the poweruprate will also result in changes in plant operating characteristics (software changes). These changes will range from simple changes in process temperatures and flow rates to plant responses to accidents and transients."

Request: Please state how these changes to the simulator software will be controlled and whether the software changes will be implemented before operation at power levels above the plant's current licensed power level.

Response:

Changes to the simulator software are administratively controlled under "Configuration Management Training Desk Guide," TDG-SIM-016. This guidance provides configuration controls for simulator documentation audit trail of software, installation controls, and functional acceptance testing. This program is consistent with ANSI/ANS 3.5-1985.

Minimal changes are required to the existing software models regarding dynamic response (one new annunciator alarm and instrument spanning changes). The plant modification improves accuracy of process instrumentation allowing for operation at an increased actual power level. No such "instrument error" is specifically built into the existing accuracy of the models. The impact on the simulator models needed to support the power uprate modification will primarily involve adjusting the Initial Condition (IC) records to reflect the proper power conditions.

The simulator Plant Monitoring Computer (PMC) will be impacted more significantly than the simulator software models. The simulator PMC is of a "simulated" design. This means that the exact Core Operating Limit Supervisory System (COLSS) software executing on the reference plant PMC system is copied to the simulator PMC host computer for execution. The simulator software model data is sent to the simulator PMC host, which, in turn, provides the input data for the COLSS program.

Based on the current plans for implementation of COLSS program changes and the update to the simulator PMC system, these changes to the simulator will be

implemented prior to operation at power levels above the plant's current licensed power level.

4. Section 4.2.1, Control Room, states that "A Control Room alarm will be added due to the installation of the LEFM CheckPlus System. This alarm will be added to the appropriate alarm response procedure . . . parameters determined to be outside of their existing indicating bands will be addressed within the design change package which implements all of the additional plant changes (including span and scaling changes) due to this power uprate."

Request: Please state whether these changes will be implemented before operation at power levels above the plant's current licensed power level. Please describe any changes that may be required to the Safety Parameter Display System.

Response:

The modification to be installed during the outage will install the annunciator. The alarm response procedure will be updated prior to startup from the outage to reflect the new alarm. Thus, these changes will be available prior to operation above the current licensed power level.

The power uprate will have negligible impact on the Waterford 3 Safety Parameter Display System (SPDS). All points will remain within their existing ranges. Affected operating values, such as RCS temperature, steam generator pressures, and associated flows are addressed within applicable operating procedures.

5. Section 4.2.2, Normal Operating Procedures/Emergency Operating Procedures/Off-normal Procedures

Request: Please state whether the changes described in Section 4.2.2 will be implemented before operation at power levels above the plant's current licensed power level.

Response:

The Waterford 3 change control process requires the identification and update of the affected operating procedures associated with a modification. The procedures that impact plant operation will be revised prior to operation above the current licensed power level.

6. Section 4.2.3, Operator Training and Simulator, states "Classroom and Simulator training will be provided on all changes that affect operator performance caused by this power uprate. . . . All control room and plant process computer system changes as a result of the power uprate will be completed."

Request: Please state whether these changes and training will be implemented before operation at power levels above the plant's current licensed power level.

Response:

As discussed above in response to question 3, the software changes will be implemented prior to operation above the current licensed power level. Training will consist of briefings, required reading, classroom sessions, and a simulator demonstration. Some of this training is described in response to question 2 above. The simulator portion will be as follows:

- COLSS/PMC will be updated for the power uprate modification on the current (RF10 Cycle 11) simulator configuration, which is not the same as the final plant configuration following completion of RF 11.
- RF 10 Cycle 11 simulator configuration at 100% (3390 MWt), the beginning of cycle initial condition, will be escalated to 101.5% power and reactor power indications will be calibrated down to 100% power. This initial condition will be used to train operators, and will be complete prior to operation at elevated power levels.
- During the RF 11 outage, the simulator will be modified to the Cycle 12 configuration, including power uprate, and tested in accordance with TDG-SIM-016 to meet ANSI 3.5 requirements.

**Attachment 2**

**To**

**W3F1-2002-0006**

**List of Regulatory Commitments**



### Commitment Summary

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
These procedures [see Section 4.2.2 of the original submittal] will be revised prior to operation at the uprated power conditions.	X		Upon implementation
Training relative to the procedures will be completed prior to operation at elevated power levels.	X		Upon implementation
COLSS program changes and the update to the simulator PMC system ... will be implemented prior to operation at power levels above the plant's current licensed power level.	X		Upon implementation
The modification to be installed during the outage will install the annunciator. The alarm response procedure will be updated prior to startup from the outage to reflect the new alarm. Thus, these changes will be available prior to operation above the current licensed power level.	X		Startup from RF11
The simulator software changes will be implemented prior to operation above the current licensed power level. Training will consist of briefings, required reading, classroom sessions, and a simulator demonstration.	X		Upon implementation