January 6, 1993

Docket No. 50-382

Mr. Ross P. Barkhurst
Vice President Operations
Entergy Operations, Inc.
Post Office Box B
Killona, Louisiana 70066

Dear Mr. Barkhurst:

SUBJECT: ISSUANCE OF AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M84789)

The Commission has issued the enclosed Amendment No. 80 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 21, 1992.

The amendment changes the Appendix A Technical Specifications by reducing the steam pressure requirements for surveillance testing of the turbine-driven emergency feedwater pump.

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

Sincerely,

ORIGINAL SIGNED BY:

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 80 to NPF-38
2. Safety Evaluation

cc w/enclosures:
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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See next page

Mr. Ross P. Barkhurst
Entergy Operations, Inc.

Waterford 3

cc:

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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 80
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated October 21, 1992, 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 as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-38 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. 80 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John T. Larkins

John T. Larkins, Director
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 6, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 80

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

| REMOVE PAGE | INSERT PAGE |
| --- | --- |
| 3/4 7-4 | 3/4 7-4 |

## EMERGENCY FEEDWATER SYSTEM

### LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator emergency feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one emergency feedwater pump inoperable, restore the required emergency feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two emergency feedwater pumps inoperable be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three emergency feedwater pumps inoperable, immediately initiate corrective action to restore at least one emergency feedwater pump to OPERABLE status as soon as possible.

### SURVEILLANCE REQUIREMENTS

4.7.1.2 The emergency feedwater system shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Verifying on a STAGGERED TEST BASIS that each motor-driven pump develops a discharge pressure of greater than or equal to 1298 psig on recirculation flow, and that the turbine-driven pump develops a discharge pressure of greater than or equal to 1342 psig on recirculation flow when the steam generator pressure is greater than 750 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the turbine-driven pump.

2. Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

TABLE 3.7-2

MAXIMUM ALLOWABLE LINEAR POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS

| MAXIMUM NUMBER OF INOPERABLE SAFETY VALVES ON ANY OPERATING STEAM GENERATOR | MAXIMUM ALLOWABLE LINEAR POWER LEVEL-HIGH TRIP SETPOINT (PERCENT OF RATED THERMAL POWER) |
|---|---|
| 1 | 86.8 |
| 2 | 69.4 |
| 3 | 52.1 |
| 4 | 34.7 |

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 80 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

## 1.0 INTRODUCTION

By application dated October 21, 1992, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Waterford 3 Technical Specifications (TSs). The requested change would revise TS 4.7.1.2.a.1 to decrease the value of the secondary steam supply pressure specified for surveillance of the turbine-driven emergency feedwater (EFW) pump from ≥880 psig to ≥750 psig. In addition, the submittal requests to change the term "secondary steam supply pressure" to "steam generator pressure."

## 2.0 EVALUATION

The most probable cause of degradation of the Waterford 3 Steam Generator tubes is intergranular stress corrosion cracking (IGSCC). To reduce the propensity of the steam generator Alloy 600 U-tubes for stress corrosion cracking and intergranular attack, the licensee is requesting a reduction of the primary-side temperatures of 611°F for the hot leg and 553°F for the cold leg to approximately 603°F and 545°F respectively. Although these values remain within TS requirements, reducing primary side temperatures will result in a proportional reduction in secondary steam supply pressure. The reduced secondary steam supply pressure will be below the value specified for surveillance testing of the EFW pump.

Currently, TS 4.7.1.2.a.1 requires surveillance of the EFW pump every 31 days to verify that the pump develops a discharge pressure of ≥1342 psig on recirculation flow when the secondary steam supply pressure is ≥880 psig. With the new reduced primary temperatures, Waterford 3 would be required by the surveillance requirements to raise the primary side temperatures or reduce the plant load until secondary steam supply pressure exceeded 880 psig in order to verify pump performance. Raising the primary side temperatures or reducing the plant load on a monthly basis could increase the possibility of reactor transients. The requested change to TS 4.7.1.2.a.1 to require a secondary steam supply pressure of ≥750 psig will allow surveillance testing of the EFW pump under stable conditions at the new reduced primary temperatures.

In its submittal, the licensee stated that the EFW pump curve indicates that a power of 300 bhp at a speed of 4400 rpm is required to provide the desired discharge pressure of 1342 psig. The expected performance curve for the turbine driver demonstrates that a steam inlet pressure of 135 psig is sufficient to provide the required 300 bhp. Thus, at a secondary steam supply pressure of 750 psig, the steam pressure at the turbine driver will greatly exceed the necessary value of 135 psig. Therefore, the proposed reduction in required secondary steam supply will not affect the EFW pump's capability to deliver the required flow rate and discharge pressure during operation.

Based on its review, the staff concludes that decreasing the value of the secondary steam supply pressure required by TS 4.7.1.2.a.1 from ≥880 psig to ≥750 psig will have no impact on the capability of the pump to perform its required function and is therefore acceptable. Additionally, the staff finds the substitution of "steam generator pressure" for "secondary steam supply pressure" to be editorial in nature and acceptable.

## 3.0 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.

## 4.0 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 and changes a 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 (57 FR 55579). 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.

## 5.0 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: M. Sykes

Date: January 6, 1993