

March 2, 1995

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

SUBJECT: ISSUANCE OF AMENDMENT NO. 103 TO FACILITY OPERATING LICENSE  
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M90192 )

Dear Mr. Barkhurst:

The Commission has issued the enclosed Amendment No. 103 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 August 19, 1994, as supplemented by letter dated October 14, 1994.

The amendment changes the Appendix A TSs by removing the Limiting Condition For Operation (LCO) 3/4.3.4, the associated surveillance requirements, and Bases information from the TSs. This information and requirements will be incorporated into the Waterford 3 Updated Final Safety Analysis Report (UFSAR) and maintained under the provisions of 10 CFR 50.59.

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:

Chandu P. Patel, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 103 to NPF-38  
2. Safety Evaluation

cc w/encls: See next page

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

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*Chandu P. Patel*

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Waterford 3

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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. 103  
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 August 19, 1994, as supplemented by letter dated October 14, 1994, 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.

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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. 103, 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

*Chandu P. Patel*

Chandu P. Patel, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the  
Technical Specifications

Date of Issuance: March 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 103  
TO FACILITY OPERATING LICENSE NO. NPF-38  
DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

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**TABLE 4.3-9 (Continued)**

**TABLE NOTATIONS**

**\*Not used.**

**\*\*During WASTE GAS HOLDUP SYSTEM operation.**

- (1) Note 1 has been deleted**
- (2) Note 2 has been deleted**
- (3) Note 3 has been deleted**
- (4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
  - 1. Zero volume percent hydrogen, balance nitrogen, and**
  - 2. Four volume percent hydrogen, balance nitrogen.****
- (5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
  - 1. Zero volume percent oxygen, balance nitrogen, and**
  - 2. Four volume percent oxygen, balance nitrogen.****
- (6) Note 6 has been deleted.**

Page 3/4 3-68 has been deleted

INSTRUMENTATION

BASES

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3/4.3.3.10 This section has been deleted.

3/4.3.3.11 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the WASTE GAS HOLDUP SYSTEM.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 103 TO  
FACILITY OPERATING LICENSE NO. NPF-38  
ENERGY OPERATIONS, INC.  
WATERFORD STEAM ELECTRIC STATION, UNIT 3  
DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated August 19, 1994, as supplemented by letter dated October 14, 1994, Energy Operations, Inc. (the licensee), submitted a request for changes to the Waterford Steam Electric Station, Unit 3, Technical Specifications (TSs). The requested changes would remove the Limiting Condition For Operation (LCO) 3/4.3.4, the associated surveillance requirements, and Bases information from the TSs. This information and requirements will be incorporated into the Waterford 3 Updated Final Safety Analysis Report (UFSAR) and maintained under the provisions of 10 CFR 50.59.

The October 14, 1994, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to state TSs to be included as part of the license. Such TSs are to include "information of the amount, kind, and source of special nuclear material required, the place of the use, and the specific characteristics of the facility," from which the Commission can find that the facility's operation "will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public." The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. That regulation requires that the TSs include items in five specific categories, including (1) safety limits; limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TSs.

The Commission has provided guidance for the contents of TSs in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" ("Final Policy Statement"), 58 FR 39132 (July 22, 1993), in which the Commission indicated that compliance with the Final Policy Statement

satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TSs to licensee-controlled documents, consistent with the standard enunciated in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). In that case, the Atomic Safety and Licensing Appeal Board indicated that "technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety."

Consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether an LCO is required to be included in the TSs, as follows: (1) Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.<sup>1</sup> As a result, existing TSs requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TSs, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

### 3.0 EVALUATION

The licensee has proposed changes to TS 3/4.3.4 to remove the requirements related to the operability of the turbine overspeed controls, and related surveillance requirements. In the amendment application, the licensee committed to include these requirements in the Updated Safety Analysis Report (UFSAR).

The turbine is equipped with control valves and stop valves which control turbine speed during normal plant operation and protect it from overspeed during abnormal conditions. The turbine overspeed protection system consists of separate mechanical and electrical sensing mechanisms which are capable of initiating fast closure of the steam valves. Currently, TS 3/4.3.4 requires particular operability and surveillance requirements for these steam control

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<sup>1</sup> The Commission recently promulgated a proposed change to §50.36, pursuant to which the rule would be amended to codify and incorporate these criteria (59 FR 48180, September 20, 1994). The Commission's Final Policy Statement specified that LCOs for Reactor Core Isolation Cooling, Isolation Condenser, Residual Heat Removal, Standby Liquid Control, and Recirculation Pump Trip are included in the TS under Criterion 4 (58 FR 39136).

and stop valves to minimize the potential for fragment missiles that might be generated as the result of a turbine overspeed event. The licensee has proposed to relocate these provisions to the UFSAR such that future changes to the operation and surveillance of the turbine overspeed features could be changed under 10 CFR 50.59.

Although the design basis accidents and transients include a variety of system failures and conditions which might result from turbine missiles striking various plant systems and equipment, the low likelihood of turbine missiles does not constitute a part of the primary success path to prevent or mitigate such design basis accidents and transients. The system failures and plant conditions could be caused by other events as well as turbine failures. Similarly, the turbine overspeed control is not part of an initial condition of a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Probabilistic safety assessments (PRA) and operating experience have demonstrated that proper maintenance of the turbine overspeed control valves is important to minimize the potential for overspeed events and turbine damage; however that experience has also demonstrated that there is low likelihood of significant risk to public health and safety because of turbine overspeed events.

The Waterford 3 turbine-generator placement and orientation is unfavorable with respect to the station reactor buildings. This configuration places the reactor auxiliary building, control room, battery room, primary water condensate storage tanks, main steam lines, and intake cooling water structure, as well as the containment building, within the low trajectory missile (LTM) strike zone. However, there is no safety related equipment located inside the turbine building.

Westinghouse has recently reevaluated failure rates for turbine valves on BB-296 units with steam chests (Waterford 3 type turbines) based on valve reliability through May of 1994. The probability for turbine missile ejection (P1) at Waterford 3 was also calculated. The results show that for the maximum surveillance interval studied (6 months), P1 for Waterford 3 is much lower than the historical values assumed in the Waterford 3 and NRC studies used in the original licensing basis. The probability of damage to safety related equipment based on turbine manufacturer's failure data was determined to be acceptably low. The staff has reviewed the maintenance and failure histories of the turbine valves provided by the licensee and has concluded they do not conflict with the Westinghouse conclusions. The staff has also reviewed the licensee's implementation of turbine vendor recommendations related to overspeed and concluded that the recommendations are adequately evaluated and implemented as necessary to support the missile generation probability assumptions used in the analysis.

Further, the potential for and consequences of turbine overspeed events are diminished by the licensee's inservice inspection program, which must comply with 10 CFR 50.55(a), that includes provisions for basic surveillance requirements for the turbine control and stop valves in accordance with the manufacturer's recommendations. The licensee stated that the subject change request will have no negative impact on the periodic turbine generator

inspections, including inspections and tests of the main steam stop and control valves and reheat stop and control valves. Waterford 3 will continue to implement these commitments with the goal of maximizing turbine generator reliability and efficiency.

Accordingly, the staff concluded that the requirements for turbine overspeed controls do not meet the TS criteria in the Final Policy Statement. The limiting conditions for operation and surveillance requirements for turbine overspeed controls were removed from the standard technical specifications.

On this basis, the staff concludes that these requirements are not required to be in the TSs under 10 CFR 50.36 or Section 182a of the Atomic Energy Act, because they are not required to assure adequate protection of the public health and safety. Further, they do not fall within any of the four criteria set forth in the Commission's Final Policy Statement, discussed above. In addition, the NRC staff finds that sufficient regulatory controls exist under 10 CFR 50.59. Accordingly, the staff has concluded that these requirements may be relocated from the TSs to the UFSAR. The NRC staff offers no objection to the deletion of the Bases associated with TS 3/4.3.4.

#### 4.0 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.

#### 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 and changes 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 (59 FR 45023).

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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. P. Patel

Date: March 2, 1995