

January 5, 1988

Docket No. 50-382

Mr. J. G. Dewease  
Senior Vice President - Nuclear Operations  
Louisiana Power and Light Company  
317 Baronne Street, Mail Unit 17  
New Orleans, Louisiana 70112

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Dear Mr. Dewease:

SUBJECT: ISSUANCE OF AMENDMENT NO. <sup>26</sup> FACILITY OPERATING LICENSE  
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3  
(TAC NO. 66290)

The Commission has issued the enclosed Amendment No. <sup>26</sup> to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications in response to your application dated August 28, 1987.

The amendment changes the Appendix A Technical Specifications by revising the limits for Axial Shape Index.

A copy of the Safety Evaluation supporting the amendment is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

*JS*

James H. Wilson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 26 to NPF-38
2. Safety Evaluation

cc w/enclosures:

See next page

LTR NAME: WATERFORD 3 AMENDMENT NO. 63

PD4/LA *JN*  
PNoonan  
12/14/88

PD4/RM *JW*  
JWilson  
12/16/87

*OGC-Bethesda*  
OGC-Bethesda  
*12/28/87*  
12/28/87

*SRXB*  
SRXB  
WHodges  
12/16/87

PD4/D  
JCalvo  
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1/5/88

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PDR

Mr. Jerrold G. Dewease  
Louisiana Power & Light Company

Waterford 3

cc:

W. Malcolm Stevenson, Esq.  
Monroe & Leman  
1432 Whitney Building  
New Orleans, Louisiana 70103

Mr. E. Blake  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, D.C. 20037

Resident Inspector/Waterford NPS  
Post Office Box 822  
Killona, Louisiana 70066

Mr. Ralph T. Lally  
Manager of Quality Assurance  
Middle South Services, Inc.  
Post Office Box 61000  
New Orleans, Louisiana 70161

Chairman  
Louisiana Public Service Commission  
One American Place, Suite 1630  
Baton Rouge, Louisiana 70825-1697

Mr. K. W. Cook  
Nuclear Safety and Regulatory Affairs Manager  
Louisiana Power & Light Company  
317 Baronne Street  
New Orleans, Louisiana 70112

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Office of Executive Director for  
Operations  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Mr. William H. Spell, Administrator  
Nuclear Energy Division  
Office of Environmental Affairs  
Post Office Box 14690  
Baton Rouge, Louisiana 70898

President, Police Jury  
St. Charles Parish  
Hahnville, Louisiana 70057



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

LOUISIANA POWER AND LIGHT COMPANY

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 26  
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Louisiana Power and Light Company (the licensee) dated August 28, 1987, 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. 26, 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

*Jose A. Calvo*

Jose A. Calvo, Director  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 5, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 26  
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.

Remove

3/4 2-12

Insert

3/4 2-12

## POWER DISTRIBUTION LIMITS

### 3/4.2.7 AXIAL SHAPE INDEX

#### LIMITING CONDITION FOR OPERATION

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3.2.7 The AXIAL SHAPE INDEX (ASI) shall be maintained within the following limits:

- a. COLSS OPERABLE  
-0.22 < ASI < +0.27 for THERMAL POWERS  $\geq$  70% of RATED THERMAL POWER  
-0.27  $\leq$  ASI  $\leq$  +0.27 for THERMAL POWERS < 70% of RATED THERMAL POWER
- b. COLSS OUT OF SERVICE (CPC)  
-0.17 < ASI < +0.22 for THERMAL POWERS  $\geq$  70% of RATED THERMAL POWER  
-0.22  $\leq$  ASI  $\leq$  +0.22 for THERMAL POWERS < 70% of RATED THERMAL POWER

APPLICABILITY: MODE 1 above 20% of RATED THERMAL POWER.\*

#### ACTION:

With the AXIAL SHAPE INDEX outside its above limits, restore the AXIAL SHAPE INDEX to within its limit within 2 hours or reduce THERMAL POWER to less than 20% of RATED THERMAL POWER within the next 4 hours.

#### SURVEILLANCE REQUIREMENTS

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4.2.7 The AXIAL SHAPE INDEX shall be determined to be within its limit at least once per 12 hours using the COLSS or any OPERABLE Core Protection Calculator channel.

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\*See Special Test Exception 3.10.2.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 26 TO

FACILITY OPERATING LICENSE NO. NPF-38

LOUISIANA POWER AND LIGHT COMPANY

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated August 28, 1987, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Attachment A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3. The proposed changes would revise Technical Specification 3.2.7, Power Distribution Limits - Axial Shape Index (ASI), to clarify the relationship between axial shape monitoring limits described in the Technical Specifications and the axial shape assumptions that were used in Cycle 2 safety analysis. In addition, the proposed changes will provide increased ASI operating space at lower core power levels.

2.0 DISCUSSION

The proposed changes would revise the ASI limits stipulated in Technical Specification 3.2.7. Currently, the licensee must maintain the ASI between -0.23 and +0.28 when the Core Operating Limit Supervisory System (COLSS) is operable and -0.17 and +0.22 when COLSS is out of service and the Core Protection Calculators (CPSs) are used for ASI monitoring. These limits are based on the non-LOCA safety analysis, the LOCA safety analysis, and estimated ASI monitoring uncertainties.

In the proposed changes, the licensee would revise Limiting Condition of Operation (LCO) 3.2.7a to impose ASI limits of -0.22 and +0.27 when COLSS is operable and core power level is equal to or greater than 70% and ASI limits of -0.27 and +0.27 when COLSS is operable and core power level is less than 70%. The proposed changes would also revise LCO 3.2.7b to impose ASI limits of -0.17 and +0.22 when COLSS is out of service and core power level is equal to or greater than 70% and ASI limits of -0.22 and +0.22 when COLSS is out of service and core power level is less than 70%. These changes are being made to reflect the reevaluation of the LOCA that was performed at initial core power levels below 70% and also to reflect the ASI monitoring uncertainty associated with COLSS.

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### 3.0 EVALUATION

The intent of Technical Specification 3.2.7 is to ensure that the actual value of the ASI is maintained within the range of values that was assumed in the Cycle 2 safety analysis for Waterford 3. The ASI must be maintained within a specified range in order to ensure that the peak linear heat rate and minimum Departure from Nucleate Boiling Ratio (DNBR) remain within their respective safety limits during an anticipated operational occurrence. Currently the Cycle 2 non-LOCA safety analysis was performed assuming an ASI range of -0.30 to +0.30 while the Cycle 2 LOCA safety analysis was performed assuming an ASI range of -0.25 to +0.30. In addition, these ASI values must be adjusted to account for the uncertainties in the ASI monitoring instrumentation. At Waterford 3 both the COLSS and the CPCs can be used for ASI monitoring. An uncertainty analysis performed concurrent with the Cycle 2 safety analysis determined that the COLSS ASI monitoring uncertainty was less than +0.03 and the CPC ASI monitoring uncertainty was less than +0.08. Thus, in order to ensure that the Cycle 2 safety analysis remain bounding, the proposed changes will require the COLSS-indicated ASI to be maintained between -0.22 and +0.27 and, if COLSS is out of service, the CPC-indicated ASI be maintained between -0.17 and +0.22.

The range of ASI values discussed above is based on the LOCA safety analysis since these events are analyzed over a more narrow ASI range than the non-LOCA events. However, an evaluation of the LOCA events for Waterford 3 has determined that if the core power level is less than 70%, the potentially more severe axial power shapes that could result from the wider ASI range assumed for the non-LOCA events would be compensated for by the lower initial core power level. Thus, when core power is less than 70%, the COLSS-indicated ASI must be maintained between -0.27 and +0.27 and, if COLSS is out of service, the CPC-indicated ASI must be maintained between -0.22 and +0.22.

Since the spectrum of axial shapes that was considered during the Cycle 2 safety analysis envelopes the range of ASI values that is allowed by the proposed change, the staff concludes that the proposed changes do not increase the potential for more severe axial power shapes than assumed in the safety analysis. Therefore, the proposed changes are acceptable.

### 4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Nuclear Energy Division, Office of Environmental Affairs, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area. The 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. 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 this amendment.

#### 6.0 CONCLUSION

Based upon its evaluation of the proposed changes to the Waterford 3 Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the Waterford 3 Technical Specifications.

Dated: January 5, 1988

Principal Contributor: J. Wilson