

December 14, 1988

Docket No. 50-382

DISTRIBUTION:

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. 47 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3
(TAC NO. 68183)

The Commission has issued the enclosed Amendment No. 47 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 May 4, 1988.

The amendment changes the Appendix A Technical Specifications on Engineered Safety Features Actuation System Instrumentation as it related to actions required for loss of one or more channels that protect against loss of voltage or degraded voltage on the 4.16kV Emergency Bus and 480V Emergency Bus undervoltage circuits.

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

Sincerely,

/s/

David L. Wigginton, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 47 to NPF-38
- 2. Safety Evaluation

cc w/enclosures:
See next page

LTR NAME: WATERFORD AMEND TAC 68183

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Project Directorate - IV
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12/14/88



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

December 14, 1988

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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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The amendment changes the Appendix A Technical Specifications on Engineered Safety Features Actuation System Instrumentation as it related to actions required for loss of one or more channels that protect against loss of voltage or degraded voltage on the 4.16kV Emergency Bus and 480V Emergency Bus undervoltage circuits.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "D. L. Wigginton".

David L. Wigginton, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

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cc w/enclosures:
See next page

Mr. Jerrold G. Dewease
Louisiana Power & Light Company

Waterford 3

cc:

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New Orleans, Louisiana 70112



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. 47
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 May 4, 1988, 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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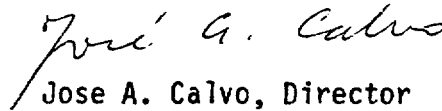
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 47, 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, 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: December 14, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 47
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 3-15
3/4 3-18
-

Insert

3/4 3-15
3/4 3-18
3/4 3-18a

WATERFORD - UNIT 3

3/4 3-15

Amendment No. 47

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
4. MAIN STEAM LINE ISOLATION					
a. Manual (Trip Buttons)	2 sets of 2 per steam generator	1 set of 2 per steam generator	2 sets of 2 per operating steam generator	1, 2, 3	16
b. Steam Generator Pressure - Low	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	13*, 14*
c. Containment Pressure - High	4	2	3	1, 2, 3	13*, 14*
d. Automatic Actuation Logic	4	2	3	1, 2, 3	12
5. SAFETY INJECTION SYSTEM SUMP RECIRCULATION (RAS)					
a. Manual RAS (Trip Buttons)	2	1	2	1, 2, 3, 4	12
b. Refueling Water Storage Pool - Low	4	2	3	1, 2, 3, 4	13*, 14*
c. Automatic Actuation Logic	4	2	3	1, 2, 3, 4	12
6. LOSS OF POWER (LOV)					
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	3/bus	3/bus	3/bus	1, 2, 3	17, 18
b. 480 V Emergency Bus Undervoltage (Loss of Voltage)	3/bus	3/bus	3/bus	1, 2, 3	17, 18
c. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	3/bus	3/bus	3/bus	1, 2, 3	17, 18

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
7. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per steam generator	1 set of 2 per steam generator	2 sets of 2 per steam generator	1, 2, 3	15
b. SG Level (1/2) - Low and ΔP (1/2) - High	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	13*, 14*
c. SG Level (1/2) - Low and No S/G Pressure - Low Trip (1/2)	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	13*, 14*
d. Automatic Actuation Logic	4	2	3	1, 2, 3	12
e. Control Valve Logic (Wide Range SG Level - Low)	2/steam generator	1/steam generator	2/steam generator	1, 2, 3	15

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than 400 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to 500 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- * The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

- ACTION 12 -** With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 13 -** With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION and/or operation in the other applicable MODE(S) may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6k. The channel shall be returned to OPERABLE status no later than prior to entry into the applicable MODE(S) following the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below:

Process Measurement Circuit	Functional Unit Bypassed/Tripped
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-3 (Continued)

TABLE NOTATION

ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE, STARTUP and/or POWER OPERATION and/or operation in the other applicable MODE(S) may continue provided the following conditions are satisfied:

- a. Verify that one of the inoperable channels has been bypassed and place the other inoperable channel in the tripped condition within 1 hour.
- b. All functional units affected by the bypassed/tripped channel shall also be placed in the bypassed/tripped condition as listed below.

	Process Measurement Circuit	Functional Unit Bypassed/Tripped
1.	Containment Pressure Circuit	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2.	Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator Level - High Steam Generator ΔP (EFAS)
3.	Steam Generator Level	Steam Generator Level -Low Steam Generator Level - High Steam Generator ΔP (EFAS)

STARTUP and/or POWER OPERATION and/or operation in the other applicable MODE(S) may continue until the performance of the next required CHANNEL FUNCTIONAL TEST. Subsequent STARTUP and/or POWER OPERATION and/or operation in the other applicable MODE(S) may continue if one channel is restored to OPERABLE status and the provisions of ACTION 13 are satisfied.

ACTION 15 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channels to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ACTION 17 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the tripped (D.C. Relay energized) condition within 1 hour, the remaining Emergency Diesel Generator is OPERABLE, and the inoperable channel is restored to OPERABLE status within the next 48 hours. Otherwise, be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the next 30 hours. The surveillance requirements of Table 4.3-2 are waived for all channels while this action requirement is in effect.

TABLE 3.3-3 (Continued)

TABLE NOTATION

ACTION 18 - With more than one channel inoperable, or if the inoperable channel cannot be placed in the trip (D.C. Relay energized) condition, declare the associated Emergency Diesel Generator inoperable and take the ACTION required by Specification 3.8.1.1. The surveillance requirements of Table 4.3-2 are waived for all channels while this action requirement is in effect.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 47 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

On March 21, 1988, Waterford Steam Electric Station Unit 3 was operating at 100% power when a maintenance technician inadvertently allowed two wire connections to short while replacing a voltmeter selector switch, causing a fuse of the 'B' train 4160V undervoltage (UV) relay coil to blow. Replacement of this fuse required temporarily disabling all three channels of undervoltage protection for the 'B' train 4160V safety bus. Since these relays are delta connected, the blown fuse reduced the UV actuation to a 1/1 rather than the designed 3/3 logic. The application of Technical Specification 3.3.2 Action Requirements 12 and 17 to this circuit was impractical since repairing one channel had the effect of rendering all three channels inoperable. By letter dated May 4, 1988, Louisiana Power and Light Company requested a revision to Technical Specification Table 3.3-3 and Action Requirement 17 and the addition of Action Requirement 18 for conditions in which more than one relay is inoperable.

2.0 EVALUATION

The blown fuse caused two of the three undervoltage relays to drop out, which resulted in the actuation of the respective contacts. This provided 125V dc power to 27-2X and 27-3X relays. These dc energized relays, in conjunction with the 27-1X of phase C, provide 3-out-of-3 coincidence logic to send an emergency start signal to the 'B' emergency diesel generator. Since these relays were energized as a result of the blown fuse, they would not have prevented an emergency start of the 'B' diesel generator but they effectively reduced the undervoltage signal coincidence logic to 1-out-of-1 for phase C.

Technical Specification (TS) 3.3.2 Action Requirement 17 allows continued operation in modes one, two, or three with one inoperable undervoltage channel provided the channel is placed in the "tripped" condition within one hour. If this is not possible, Action Requirement 12 states that the inoperable undervoltage channel is to be restored within 48 hours or the plant be in hot standby within 6 hours and cold shutdown in the following 30 hours. The application of TS 3.3.2 Action Requirements 12 and 17 to this circuit was impractical since repairing one channel has the effect of

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rendering all three channels inoperable. System design is such that all three relays must be removed from service in order to replace the blown fuse. This configuration is not addressed in the present Technical Specifications, therefore, to repair the circuit the licensee would have to intentionally enter TS 3.0.3. TS 3.0.3 is to protect against conditions which are outside of the plant design basis. Since repair of the circuitry should not be outside the design basis, the current TS should be revised to preclude the need to enter 3.0.3.

Removing the three relays from service prevents the associated emergency diesel generator (EDG) from starting on bus undervoltage. In the earlier proposal, the licensee was going to revise Action 17 such that the affected EDG would be declared inoperable at the end of the 48 hour period rather than shutting down the plant. This would have increased the inoperability time of a diesel generator to 120 hours (i.e., 48 hours by the proposed Action 17 plus 72 hours inoperability of a diesel generator allowed by Action a. of TS 3.8.1.1). This was not in accordance with the Standard Technical Specifications. Since then, the licensee has agreed to comply with the old Action 17 except that the surveillance requirements for the dc relays specified in Table 4.3-2 are waived for all channels while Action 17 requirement is in effect. Action 18 is being added for those conditions in which the relay in Action 17 cannot be placed in the trip condition within one hour and for conditions in which more than one dc relay is inoperable. The proposed change will relate the operability of the dc relays to the operability of the EDGs, the change is minor in nature and is, therefore, acceptable.

We have reviewed the licensee's submittal and have concluded that the proposed change to Technical Specification Table 3.3-3 will relate the operability of the dc relays to the operability of the emergency diesel generators, the change is minor in nature and is, therefore, acceptable.

3.0 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.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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.

5.0 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: December 14, 1988

Principal Contributor: N. Trehan