January 19, 1988

Docket No. 50-382

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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

Dear Mr. Dewease:

SUBJECT: ISSUANCE OF AMENDMENT NO. 27 TO FACILITY OPERATING LICENSE NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. 65960)

The Commission has issued the enclosed Amendment No. 27 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 July 29, 1987, as supplemented by your letter dated November 5, 1987.

The amendment changes the Appendix A Technical Specifications by revising the upper limit on containment internal pressure and change the pressure measurement units to water gauge.

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,

/s/

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. 27 to NPF-38
2. Safety Evaluation

cc w/enclosures:
See next page

LTR NAME: WATERFORD 3 TAC 65960

Concurrence subject to SE correction noted to verification and subject to verification that there are no comments filed on NSHC proposed finding.

PD4/LA	PD4/PM	SPLB	OGC-Bethesda	PD4/D
PNoonan	JWilson	JCraig	SHLewN	JCalvo
12/9/87	12/10/87	12/17/87	12/23/87	01/19/87

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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. 27
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 July 29, 1987, as supplemented by letter dated November 5, 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.

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. 27 , 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

for Walter A. Paulson
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 19, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 27

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	Insert
XIX	XIX
3/4 6-11	3/4 6-11
3/4 6-12	3/4 6-12
B 3/4 6-2	B 3/4 6-2

LIST OF FIGURES

LIST OF TABLES

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary containment internal pressure shall be maintained less than 27 inches H_2O guage and greater than 14.375 psia.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits at least once per 12 hours.

Figure 3.6-1 Deleted

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the limits of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a or less than or equal to 0.75 L_t, as applicable during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance requirements for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that (1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the annulus atmosphere of 0.65 psid, (2) the containment peak pressure does not exceed the design pressure of 44 psig during either LOCA or steam line break conditions, and (3) the minimum pressure of the ECCS performance analysis (BTP CSB 61) is satisfied.

The maximum peak pressure expected to be obtained from an MSLB event is 42.3 psig. The limit for initial positive containment pressure of +27 inches water (approximately 1.0 psig) will limit the total pressure to less than 44 psig which is less than the design pressure and is consistent with the safety analyses. The limit for initial positive containment pressure includes a correction of 1.20 inches water for possible instrument error and an additional 6.8 inches water for conservatism.

The limit of 14.375 psia for initial negative containment pressure ensures that the minimum containment pressure is consistent with the ECCS performance analysis ensuring core reflood under LOCA conditions.

3/4.6.1.5 AIR TEMPERATURE

The limitation on containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 269.3°F during LOCA conditions and 413.5°F during MSLB conditions and is consistent with the safety analyses.

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment steel vessel will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the vessel will withstand the maximum pressure of 43.76 psig in the event of a main steam line break accident. A visual inspection in conjunction with Type A leakage test is sufficient to demonstrate this capability.

3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The use of the containment purge valves is restricted to 90 hours per year in accordance with Standard Review Plan 6.2.4 for plants with the Safety Evaluation Report for the Construction License issued prior to July 1, 1975. The purge valves have been modified to limit the opening to approximately 52° to ensure the valves will close during a LOCA or MSLB; and therefore, the SITE BOUNDARY doses are maintained within the guidelines of 10 CFR Part 100. The purge valves, as modified, comply with all provisions of BTP CSB 6-4 except for the recommended size of the purge line for systems to be used during plant operation.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 27 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 July 29, 1987, as supplemented by letter dated November 5, 1987, Louisiana Power and Light Company (LP&L, the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3. The proposed changes would revise the limiting condition for operation associated with primary containment internal pressure.

2.0 DISCUSSION

Currently, Technical Specification 3.6.1.4 allows an upper pressure operating range of approximately 0.2 psig. The frequent adjustments necessary to maintain containment pressure within the narrow Technical Specification range have resulted in undue operator time and attention to the possible detriment of other duties.

The changes proposed by the licensee would revise Technical Specification 3.6.1.4 to remove Figure 3.6-1 which defines an acceptable region for containment pressure as a function of temperature, and place the upper and lower limits on containment pressure into the text of the limiting condition for operation of Technical Specification 3.6.1.4. The lower containment pressure limit would be unchanged from Figure 3.6-1. The upper containment pressure limit would be revised to reflect the licensee's reanalysis of limiting containment pressure events.

In addition, the licensee proposes to revise the upper containment pressure limit measurement units from "psia" to "inches H_2O gauge" and update the Bases entry for Technical Specification 3.6.1.4.

3.0 EVALUATION

The Standard Review Plan (SRP), in Section 6.2, describes methodology acceptable to the staff necessary to ensure that the containment peak pressure due to a loss-of-coolant accident (LOCA) or main steam line break (MSLB) event will not exceed the containment design pressure. The licensee's present upper containment operating pressure limit (14.9 psia at 120°F) is

based on the analysis of a spectrum of LOCA break sizes and a spectrum of MSLB break sizes and initial power levels consistent with SRP criteria. The present limiting event for containment pressure, a 7.4765 ft^2 MSLB from 65% power with the concurrent failure of a containment cooling train, results in a calculated pressure of 43.76 psig with an initial (operating) pressure of 0.00 psig, compared to the Waterford 3 containment design pressure of 44.0 psig. The limiting LOCA event, a 9.82 ft^2 DESLS LOCA with minimum safety injection, results in a peak containment pressure of 43.2 psig.

The staff in its SER for Waterford 3, has previously reviewed the licensee's analyses including the break spectrum, the modified CONTEMPT-LT/26 computer code used to perform the analyses and the input assumptions concerning heat removal mechanisms, mass and energy releases and initial conditions. The methodology and analyses were found to be acceptable.

The licensee proposes to modify the upper containment pressure limit based on reanalysis of the limiting MSLB and LOCA events. In performing the reanalyses, the licensee has employed the previously approved CONTEMPT-LT/26 computer code and has preserved input values and assumptions, altering only the containment heat sink and surface area input data to reflect current conditions in containment.

The Waterford 3 containment passive heat sink and surface area data used for the original MSLB/LOCA analyses were based on conservative estimates and installed structures and equipment existing prior to completion of the construction of Waterford 3. Since then, construction has been completed and design changes implemented which affected the values for containment heat sink and surface area.

As part of the 10 CFR 50 Appendix K reanalysis effort in the summer of 1985, the licensee updated the containment heat sink information in the electrical, mechanical and civil areas. The electrical scope involved cable trays, cable, electrical boxes, exposed conduit and motors. The inventory of these items was assessed by reviewing bills of material, specifications and vendor drawings and then calculating surface areas and thickness of exposed surfaces in containment. Mechanical scope primarily involved a review of piping systems inside containment such as rerouting RCS vent piping to the quench tank and addition of bypass lines around SIS check valves. Mechanical design changes from 1979 to the present were reviewed to determine the total amount of carbon and stainless steel added to containment. Civil scope primarily involved concrete and structural steel inventories. While some revisions to heat sink data were attributable to civil design changes (e.g., addition of scaffolding and storage racks), the bulk of the change was due to more accurate determination of containment inventories. The containment heat sink review effort by the licensee resulted in some significant changes (e.g., the exposed surface area for HVAC systems increased approximately 30%).

By crediting the revised containment heat sink and surface area information, the licensee reduced the limiting MSLB peak pressure (assuming an initial pressure of 0.0 psig) to 42.3 psig and the limiting LOCA peak pressure to 41.1 psig. The limiting MSLB case was then rerun from an initial condition

of 1.0 psig, resulting in a calculated peak pressure of 43.71 psig. The licensee's proposed change would define 1.0 psig as the upper containment pressure limiting condition for operation.

The licensee indicates that pressure instrumentation error is ±1.2 inches H_2O gauge (1 psi equals 27.673 inches water). The peak MSLB pressure from an initial condition of 1.0 psig is 43.71 psig which provides a margin of 0.29 psig (approximately 8 inches H_2O gauge) to the containment design pressure. The staff concludes that this margin is sufficient to accommodate instrumentation error and provide extra conservatism.

The upper limit of 1.0 psig for containment pressure proposed by the licensee is based on reanalysis of the limiting containment pressure events defined in accordance with the SRP. Calculations were performed with a previously accepted computer code. Other than the use of actual containment heat sink and surface area information, no new input assumptions or methodology changes have been introduced into the containment pressure reanalyses of the limiting LOCA and MSLB events. Adequate allowance has been made for pressure instrumentation uncertainty. The staff, therefore, concludes that the proposed change to revise the upper containment pressure limit to 1.0 psig is acceptable.

The licensee also proposes to redefine the upper limit pressure measurement in terms of "inches H_2O gauge" rather than "psia" to maintain consistency with the instrumentation available in the control room. The peak pressure of 1.0 psig would become 27.0 inches H_2O gauge (rounded down from 27.6 inches H_2O gauge). The staff finds this change acceptable.

The licensee proposes to amend the bases for Technical Specification 3.6.1.4 in accordance with the revised analysis. The revised Bases accurately reflect the reanalyses and the staff, therefore, concludes that this change is acceptable.

The Technical Specification changes proposed by the licensee will preclude undue operator attention on maintaining containment pressure within the current narrow range currently allowed by Technical Specification 3.6.1.4. The revised containment pressure limiting condition for operation has been developed using methodology consistent with staff guidelines. The Technical Specification changes proposed by the licensee are, therefore, 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 19, 1988

Principal Contributor: J. H. Wilson