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February 11, 2000

Mr. Charles M. Dugger
Vice President Operations
Entergy Operations, Inc.
P. O. Box B
Killona, LA 70066

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF AMENDMENT RE: MODIFICATION OF LIMITING CONDITION FOR OPERATION FOR THE CHLORINE DETECTION SYSTEM AND CORRECTION OF TYPOGRAPHICAL ERROR IN TABLE 3.3-4 (TAC NO. MA4666)

Dear Mr. Dugger:

The Commission has issued the enclosed Amendment No. 156 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated December 23, 1998.

The amendment modifies the Limiting Condition for Operation for TS 3.3.3.7.1 for the chlorine detection system by changing the alarm/trip setpoint from 3 parts per million (ppm) to 2 ppm. Additionally, the amendment corrects a typographical error in Table 3.3-4.

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

Sincerely,
/RA/
N. Kalyanam, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 156 to NPF-38
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
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 December 23, 1998, 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. 156, 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 and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Gramm, Chief, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: February 11, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 156

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3/4 3-47	3/4 3-47
3/4 3-19	3/4 3-19

INSTRUMENTATION

CHEMICAL DETECTION SYSTEMS

CHLORINE DETECTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.7.1 Two independent chlorine detection systems, with their alarm/trip setpoints adjusted to actuate at a chlorine concentration of less than or equal to 2 ppm, shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

a. With one chlorine detection system inoperable, restore the inoperable detection system to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room ventilation system in the isolate mode of operation.

b. With no chlorine detection system OPERABLE, within 1 hour initiate and maintain operation of the control room ventilation system in the isolate mode of operation.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each chlorine detection system shall be demonstrated OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours and a CHANNEL CALIBRATION at least once per 31 days.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1. SAFETY INJECTION (SIAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	≤ 17.1 psia	≤ 17.4 psia
c. Pressurizer Pressure - Low	≥ 1684 psia(1)	≥ 1649.7 psia(1)
d. Automatic Actuation Logic	Not Applicable	Not Applicable
2. CONTAINMENT SPRAY (CSAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure -- High-High	≤ 17.7 psia	≤ 18.0 psia
c. Automatic Actuation Logic	Not Applicable	Not Applicable
3. CONTAINMENT ISOLATION (CIAS)		
a. Manual CIAS (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	≤ 17.1 psia	≤ 17.4 psia
c. Pressurizer Pressure - Low	≥ 1684 psia(1)	≥ 1649.7 psia(1)
d. Automatic Actuation Logic	Not Applicable	Not Applicable
4. MAIN STEAM LINE ISOLATION		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator Pressure - Low	≥ 764 psia(2)	≥ 749.9 psia(2)
c. Containment Pressure - High	≤ 17.1 psia	≤ 17.4 psia
d. Automatic Actuation Logic	Not Applicable	Not Applicable

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 156 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 December 23, 1998, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Waterford Steam Electric Station, Unit 3 (Waterford 3), Technical Specifications (TSs). The requested changes would modify the Limiting Condition for Operation for TS 3.3.3.7.1 for the chlorine detection system by changing the alarm/trip setpoint from 3 parts per million (ppm) to 2 ppm. Additionally, the amendment corrects a typographical error in Table 3.3-4 for the containment spray actuation system (CSAS) from $\leq$ 218 pounds per square inch absolute (psia) to $\leq$ 18 psia.

2.0 BACKGROUND

At Waterford 3, redundant chlorine detectors are provided near the control room air conditioning system normal outside air intake. The detectors use diffusion-type electrochemical probes. The response time of the chlorine detectors is a function of the instantaneous chlorine concentration. The original study of the concentration build-up at the outside intake following a hypothetical design basis chlorine release accident verified that the effective isolation time was less than 4 seconds, which is the isolation time stipulated by Regulatory Guide (RG) 1.95 for a Type II control room.

Upon detection of chlorine, the control room envelope is automatically placed in the isolated mode as described in Final Safety Analysis Report subsection 6.4.3.3 and the auxiliary building normal ventilation system is automatically shut down. The chlorine concentration readout is available from the plant monitoring computer and appears on a digital display in the control room.

3.0 EVALUATION

TS 3.3.3.7.1 requires an alarm/trip setpoint for the chlorine detection system to be less than or equal to 3 ppm. As a part of Waterford's effort to improve the design basis documentation, the licensee did a reanalysis of the chlorine analysis, which 1) considered the air flow balance tolerance of ± 10% in the normal outside air intake flow rate, which was an improvement over the original vendor analysis, which used the nominal flow rate, and 2) corrected an incorrect assumption in the original vendor analysis regarding air temperatures to be included in the analysis.

The reanalysis showed that the chlorine setpoint should be 2 ppm chlorine and not 3 ppm as indicated in the existing analysis and implemented in TS 3.3.3.7.1. Since Waterford 3 is located in a highly industrialized area, based on the amount of chlorine stored in the area, RG 1.95 requires a Type II control room with an isolation time of less than 4 seconds.

The combination of neglecting the flow uncertainity and not using appropriate meteorological conditions means that the original analysis erroneously concluded that a 3 ppm setpoint for the chlorine detector provided the required isolation time of less than 4 seconds, when the isolation time would have been greater than 4 seconds, not meeting the Type II control room requirement. With a 2 ppm setpoint, the 4 second isolation time is met. The staff approves of the approach and agrees with the selection of a more conservative 2 ppm or less alarm/trip setpoint for the chlorine detection system.

The typographical error on TS page 3/4 3-19, involves the CSAS allowable value for "Containment Pressure - High-High." The licensee states that the present value listed in Table 3.3-4 of ≤ 218 psia was introduced during issuance of Amendment 136, dated November 20, 1997. The value of "218 psia" is evidently a typographical mistake and the correct value should be "18 psia." The staff agrees with the change of the present value listed in Table 3.3-4 from ≤ 218 psia to ≤18 psia.

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. 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 (64 FR 9190 dated February 24, 1999). 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: N. Kalyanam

Date: February 11, 2000