

July 21, 1987

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Posted
Amdt. 20
to NPF-38

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 70160

Dear Mr. Dewease:

SUBJECT: ISSUANCE OF AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3
(TAC NO. 64636)

The Commission has issued the enclosed Amendment No. 20 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 January 13, 1987.

The amendment changes the Appendix A Technical Specifications by adding operability and surveillance requirements for the Broad Range Toxic Gas Detection System (BRTGDS). Installation of the BRTGDS and imposition of the associated technical specifications satisfy Condition 2.C.4 of the operating license and Supplement No. 6 to the Waterford SER.

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. 20 to NPF-38
- 2. Safety Evaluation

cc w/enclosures:

See next page

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Waterford 3

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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. 20
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 January 13, 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. 20, 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: July 21, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 20

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.

<u>Remove</u>	<u>Insert</u>
-	3/4 3-48a
B 3/4 3-3	B 3/4 3-3
B 3/4 3-3a	B 3/4 3-3a

INSTRUMENTATION

CHEMICAL DETECTION SYSTEMS

BROAD RANGE GAS DETECTION

LIMITING CONDITION FOR OPERATION

3.3.3.7.3 Two independent broad range gas detection systems shall be operable with their alarm/trip setpoints adjusted to actuate at the lowest achievable IDLH gas concentration level of detectable toxic gases providing reliable operation.

APPLICABILITY: All MODES.

ACTION:

- a. With one broad range gas 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 recirculation mode of operation.
- b. With no broad range gas detection system OPERABLE, within 1 hour initiate and maintain operation of the control room ventilation system in the recirculation mode of operation.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.3 Each broad range gas detection system shall be demonstrated OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a channel calibration at least once per 7 days. Calibration will consist of the introduction of a standard gas and adjusting the instrument sensitivity based on the calibration gas relationship of the standard gas to the calibrating gas.

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3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1980 and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations." Table 3.3-10 includes Regulatory Guide 1.97 Category I key variables. The remaining Category I variables are included in their respective specifications.

The Subcooled Margin Monitor (SMM), the Heated Junction Thermocouple (HJTC), and the Core Exit Thermocouples (CET) comprise the Inadequate Core Cooling (ICC) instrumentation required by Item II.F.2 NUREG-0737, the Post TMI-2 Action Plan. The function of the ICC instrumentation is to enhance the ability of the plant operator to diagnose the approach to existence of, and recovery from ICC. Additionally, they aid in tracking reactor coolant inventory. These instruments are included in the Technical Specifications at the request of NRC Generic Letter 83-37. These are not required by the accident analysis, nor to bring the plant to Cold Shutdown.

In the event more than four sensors in a Reactor Vessel Level channel are inoperable, repairs may only be possible during the next refueling outage. This is because the sensors are accessible only after the missile shield and reactor vessel head are removed. It is not feasible to repair a channel except during a refueling outage when the missile shield and reactor vessel head are removed to refuel the core. If only one channel is inoperable, it should be restored to OPERABLE status in a refueling outage as soon as reasonably possible. If both channels are inoperable, at least one channel shall be restored to OPERABLE status in the nearest refueling outage.

3/4.3.3.7 CHEMICAL DETECTION SYSTEMS

The chemical detection systems are the ammonia, chlorine, and broad range toxic gas detection systems.

The OPERABILITY of the chemical detection systems ensures that sufficient capability is available to promptly detect and initiate protective action in the event of an accidental chemical release.

The chemical detection systems provide prompt detection of toxic gas releases which could pose an actual threat to safety of the nuclear power plant or significantly hamper site personnel in performance of duties necessary for the safe operation of the plant.

The broad range toxic gas detection system operates on the principle of gas photoionization, and therefore, the system is sensitive to a broad range of gases. The system is therefore sensitive to both atmospheric and chemical composition normal fluctuations affecting the Waterford 3 site. The setpoint

INSTRUMENTATION

BASES

for the system is thus based on testing and operating experience, and the setpoint is set at the lowest achievable IDLH gas concentration providing reliable operation and the optimum detection of toxic gases. The setpoint is therefore subject to change wherein necessitated by operating experience such as a result of changes in the Waterford 3 area chemical atmospheric profile. The setpoint is established and controlled by procedure.

3/4.3.3.8 FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety-related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

3/4.3.3.9 LOOSE-PART DETECTION INSTRUMENTATION

The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the primary system and avoid or mitigate damage to primary system components. The allowable out-of-service times and Surveillance Requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 20 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 January 13, 1987, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3 (WSES-3). The proposed changes would add operability and surveillance requirements for the Broad Range Toxic Gas Detection System (BRTGDS).

2.0 DISCUSSION

The proposed changes would add Limiting Condition for Operation 3.3.3.7.3 "Broad Range Gas Detection" and the associated Surveillance Requirement 4.3.3.7.3, as well as supporting Bases to the technical specifications. The installation of a BRTGDS and imposition of the associated technical specifications satisfy Condition 2.C.4, "Broad Range Toxic Gas Detectors," of Facility Operating License No. NPF-38 and Supplement No. 6 to the Safety Evaluation Report (NUREG-0787).

Waterford 3 was allowed to operate during the first cycle without a BRTGD system due to near-term compensatory measures i.e., periodic surveys of toxic gas inventories, a hot-line communication with the St. Charles Parish Emergency Operations Center (which results in rapid notification in the event of a major chemical release accident in the vicinity of the site), a control room operator and plant personnel training program, and procedures with respect to response to toxic gases. In order to protect the control room for the WSES-3 facility from the effects of potential accidental releases of toxic gases in the area of surrounding the site, LP&L has installed duplicate chlorine and ammonia detectors on the air intake of the control room. These detectors alarm and isolate the control room in the event of detection of air concentration of either of these toxic gases in excess of a preset limit to protect control room personnel. Although these

measures were considered adequate for short-term operation, an additional level of protection will be provided by the BRTGDS for operation over the expected plant lifetime.

The proposed BRTGDS includes two redundant photoionization detectors. These detectors monitor the atmosphere in the reactor auxiliary building outside air intake duct. Whenever the concentration of the detectable gases exceeds a preset limit, these detectors will each induce an electric current in the associated circuit through photoionization, thus generating a signal. This signal automatically switches the control room air conditioning system to the isolation mode of operation.

3.0 EVALUATION

The staff has evaluated the control room chemical detection systems to be utilized by LP&L at the WSES-3 facility. This detection system includes two redundant chlorine and ammonia detectors which alarm and isolate the control room in the event of detection of either of these airborne pollutants in high enough concentrations to impact the control room personnel. In addition, the licensee will be notified by the St. Charles Parish, probably within five minutes, in the event of an accident which would release toxic chemicals to the air. The licensee has now completed installation and testing of 2 redundant BRTGD systems. LP&L has completed a 6-month testing program for the newly-installed BRTGDS and has established a setpoint for alarm and isolation which provides adequate protection to control room personnel while minimizing the number of spurious alarms. The combination of detection systems and emergency notification, coupled with procedures and training for toxic gas releases should provide protection of the control room such that potential hazards due to accidental toxic gas releases in the area will be minimized.

Based upon the above evaluation, the staff concludes that the WSES-3 control room habitability system, which includes the newly-installed BRTGDS, meets General Design Criteria 19 with respect to toxic gas protection and that the addition of operability and surveillance requirements for the BRTGDS to the Technical Specifications is 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: July 21, 1987

Principal Contributor: J. Spickler