

November 14, 1997

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

SUBJECT: ISSUANCE OF AMENDMENT NO. 135 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M99739)

Dear Mr. Dugger:

The Commission has issued the enclosed Amendment No.135 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 October 7, 1997.

The amendment changes the Appendix A TSs by modifying TS 3.3.3.7.3, and Surveillance Requirements (SR) 4.3.3.7.3 for the broad range gas detection system. Also, it makes some changes to the Bases in section 3/4.3.3.7 to incorporate information associated with the existing toxic gas monitors.

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

Sincerely,
ORIGINAL SIGNED BY:
Chandu P. Patel, Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-382

- Enclosures: 1. Amendment No.135 to NPF-38
2. Safety Evaluation

cc w/encls: See next page

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

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Entergy Operations, Inc.
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Docket No. 50-382

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2. Safety Evaluation

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Mr. Charles M. Dugger
Entergy Operations, Inc.

Waterford 3

cc:

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

ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 135
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 October 7, 1997, 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. 135, 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 to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Chandu P. Patel

Chandu P. Patel, Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: November 14, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 135

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.

REMOVE PAGES

3/4 3-48a
B 3/4 3-3a
B 3/4 3-3b

INSERT PAGES

3/4 3-48a
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 isolate 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 isolate 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.

*Including Ammonia

INSTRUMENTATION

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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. The availability of accident monitoring instrumentation is important so that responses to corrective actions can be observed and the need for, and magnitude of, further actions can be determined. These essential instruments are identified by plant specific documents addressing the recommendations of Regulatory Guide 1.97, as required by Supplement 1 to NUREG-0737, "TMI Action Items." Table 3.3.10 includes most of the plant's RG 1.97 Type A and Category 1 variables. The remaining Type A/Category 1 variables are included in their respective specifications. Type A variables are included in this LCO because they provide the primary information required to permit the control room operator to take specific manually controlled actions, for which no automatic control is provided, that are required for safety systems to accomplish their safety functions for Design Basis Accidents (DBAs). Category 1 variables are the key variables deemed risk significant because they are needed to: (1) Determine whether other systems important to safety are performing their intended functions; (2) Provide information to the operators that will enable them to determine the potential for causing a gross breach of the barriers to radioactivity release; and (3) Provide information regarding the release of radioactive materials to allow for early indication of the need to initiate action necessary to protect the public as well as to obtain an estimate of the magnitude of any impending threat.

With the number of OPERABLE accident monitoring channels less than the Required Number of Channels shown in Table 3.3-10, the inoperable channel should be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring accident monitoring instrumentation during this interval. If the 30 day AOT is not met, a Special Report approved by PORC is required to be submitted to the NRC within the following 14 days. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative Actions. This Action is appropriate in lieu of a shutdown requirement, given the likelihood of plant conditions that would require information provided by this instrumentation. Also, alternative Actions are identified before a loss of functional capability condition occurs.

With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirements of Table 3.3-10; at least one of the inoperable channels should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrumentation operation and the availability of alternate means to obtain the required information.

Continuous operation with less than the Minimum Channels OPERABLE requirements is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the accident

INSTRUMENTATION

BASES

monitoring instrumentation. Therefore, requiring restoration of one inoperable channel limits the risk that the variable will be in a degraded condition should an accident occur. If the 7 day requirement is not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 4 within 12 hours. The completion time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

TS 3/4.3.3.6 applies to the following instrumentation: ESFIPI6750 A, ESFIPR6750 B, ESFIPR6755 A&B, RC ITI0122 HA, RC ITI0112 HB, RC ITI0122 CA, RC ITI0112 CB, RC IPI0102 A,B,C,&D, RC ILI0110 X&Y, SG ILI1113 A,B,C,&D, SG ILI1123 A,B,C,&D, SG ILI1115 A2&B2, SG ILI1125 A2&B2, SI ILI7145 A, SI ILR7145 B, all CET's, all Category 1 Containment Isolation Valve Position Indicators, EFWILI9013 A&B, HJTC's, and ENIIJIO001 C&D.

3/4.3.3.7 CHEMICAL DETECTION SYSTEMS

The chemical detection systems are the 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 principal 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 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 This section deleted

3/4.3.3.9 This section deleted

*Including Amononia



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 135 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated October 7, 1997, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Waterford Steam Electric Station, Unit 3, Technical Specifications (TSs). The requested changes would modify TS 3.3.3.7.3, and Surveillance Requirements (SR) 4.3.3.7.3 for the broad range gas detection system. Also it would make some changes to the Bases in section 3/4.3.3.7 to incorporate information associated with the existing toxic gas monitors. These changes to the TSs are necessary due to a potential unreviewed safety question identified during final review prior to installation of a new broad range gas detection system approved by the Nuclear Regulatory Commission (NRC) staff by Amendment 133 dated August 19, 1997. In effect, the licensee is requesting that the TSs and associated Basis for the broad range gas detection system that were in effect prior to Amendment 133 be retained instead of implementing the approved Amendment 133.

2.0 EVALUATION

During the review of the design change to install the new broad range gas detection system approved by the NRC staff, the licensee identified a potential unreviewed safety question on September 29, 1997. Specifically, the new broad range toxic gas detection system has a self-calibration feature that utilizes the plant instrument air system. This feature improves the system's performance, but does create a scenario, involving a slow increase in toxic gas levels that could cause detection of the toxic gas to be masked. This scenario is a low probability event that could introduce the possibility of a malfunction that was not previously reviewed and approved by the NRC Staff.

As the currently installed system does not use instrument air or any other outside air source for calibration which would be affected by this scenario, it is not susceptible to similar potential vulnerability. To further evaluate the design of the new toxic gas detection system, the licensee requested that the TSs be changed such that the current detection system can remain in service until the new design is approved by the NRC staff.

The current toxic gas detection system has a photoionization detector, a local readout and alarm adjustment for detection of toxic gases and isolation of the control room. In the past this system had some reliability concerns, and it required excessive amount of maintenance and calibration efforts. The new monitors, which the licensee intends to use in future, are based on a Fourier Transform Infrared (FTIR) analysis technique. This technique utilizes microprocessor gas analysis based on infrared spectrum analysis. It is expected to be more accurate than the method used currently. However, the licensee has increased the calibration frequency to improve the reliability of the existing system.

The licensee has proposed the following changes to broad range gas detection system TSs:

- Remove two asterisks and a foot note annotating the two asterisks in limiting condition for operation (LCO) 3.3.7.3 and ACTION statement. The footnote states that the requirement for maintaining the system operable does not apply during the time (approximately one minute) when the instrument automatic background/reference spectrum check renders the instrument inoperable. This foot note is not applicable to current broad range gas detection systems.
- In SR 4.3.3.7.3, a requirement for a calibration every seven days is being added as the currently installed system does not automatically perform an equivalent function. The details regarding the calibration are being added in the Surveillance Requirement.
- The Bases in Section 3/4.3.3.7 will be modified to remove a description of the new toxic gas detection system, its operation and its calibration procedure. The revised Bases will reflect operation of the currently installed broad range gas detection system. The description of the system is being changed to reflect the method of operation of the current system.
- Page B 3/4 3-3 in Bases was issued with Amendment 133 to reflect the Bases change made in Amendment 122. However, the staff erroneously put the wrong Amendment number at the bottom of page. This amendment will reflect correct amendment number.

The staff has evaluated the licensee's proposed modification to the TSs for the toxic gas detection system. The licensee would like to modify these TSs to make them applicable to the existing toxic gas detection systems it plans to use until the new system is reviewed and approved by the NRC staff. The proposed changes by licensee do not affect the number of independent systems required to be operable, and the ACTION statement. The existing gas detection system was reviewed and approved by the NRC during the licensing process of Waterford 3. Therefore, the NRC staff concludes that the proposed amendment to the TS for the toxic gas detection system is acceptable.

3.0 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.

4.0 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 and changes surveillance requirements. 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 (62 FR 53660). 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.

5.0 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: C. Patel

Date: November 14, 1997