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

May 20, 97

SUBJECT: ISSUANCE OF AMENDMENT NO.128 TO FACILITY OPERATING LICENSE NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M96495)

Dear Mr. Dugger:

The Commission has issued the enclosed Amendment No.128 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). The amendment consists of changes to the Operating License in response to your application dated August 21, 1996, as supplemented by letter dated March 17, 1997.

The amendment approves revision of Attachment 1 to Facility Operating License No. NPF-38 concerning design and testing modifications in the Containment Vacuum Relief System (CVR) that penetrates the primary containment at Waterford 3. The penetrations affected are commonly referred to as Penetrations 53 and 65.

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.128 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

May 20, 1997

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Chandu P. Patel

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2. Safety Evaluation

cc w/encls: See next page

cc:

Administrator
Louisiana Radiation Protection Division
Post Office Box 82135
Baton Rouge, LA 70884-2135

Vice President, Operations
Support
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286

Director
Nuclear Safety & Regulatory Affairs
Entergy Operations, Inc.
P. O. Box B
Killona, LA 70066

Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, MS 39205

General Manager Plant Operations
Entergy Operations, Inc.
P. O. Box B
Killona, LA 70066

Licensing Manager
Entergy Operations, Inc.
P. O. Box B
Killona, LA 70066

Winston & Strawn
1400 L Street, N.W.
Washington, DC 20005-3502

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Resident Inspector/Waterford NPS
Post Office Box 822
Killona, LA 70066

Parish President Council
St. Charles Parish
P. O. Box 302
Hahnville, LA 70057

Executive Vice-President
and Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-1995

Chairman
Louisiana Public Service Commission
One American Place, Suite 1630
Baton Rouge, LA 70825-1697

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. 128
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 August 21, 1996, as supplemented by letter dated March 17, 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 revising Attachment 1 of Facility Operating License No. NPF-38.

3. This license amendment is effective as of its date of issuance to be implemented within 90 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: Attachment 1 of the
Operating License

Date of Issuance: May 20, 1997

WATERFORD STEAM ELECTRIC STATION
OPERATING LICENSE NPF-38

This attachment identifies items which must be completed to the Commission's satisfaction prior to startup following the refueling outage number 8.

Non-essential Containment Vacuum Relief Sensing Lines:

- Penetration 65 will be modified to reflect a Containment Leak Rate Test connection as indicated in licensee submittal dated August 21, 1996 (Attachment C page 4 of 4).

- Penetration 53 will be modified such that two automatic containment isolation valves will be located outside containment with continuous direct position indication in the control room as indicated in licensee submittal dated August 21, 1996 (Attachment C page 4 of 4).

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 128 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 August 21, 1996, as supplemented by letter dated March 17, 1997, Entergy Operations, Inc. (the licensee), submitted a request for changes to the License No. NPF-38 issued for Waterford Steam Electric Station, Unit 3 (Waterford 3). The requested changes involve the design and testing modifications at Waterford 3. These modifications require the Nuclear Regulatory Commission (NRC) staff approval for the adequacy of both the containment isolation arrangement and the Type C leak testing of the barriers of two instrument sensing lines at Waterford 3. These lines are in the Containment Vacuum Relief System (CVR) that penetrate the primary containment. The penetrations are commonly referred to as Penetrations 53 and 65. These modifications were found necessary because it was discovered that the current plant configuration did not agree with information provided to the NRC staff during the licensing process for Waterford 3. In addition the licensee proposed to revise a License Condition (Attachment 1) to the Operating License No. NPF-38 for Waterford 3 to reflect the modifications in Penetration 53 and 65.

The March 17, 1997, letter provided additional information that did not change the initial proposed no siginficant hazards consideration determination.

2.0 DISCUSSION AND EVALUATION

During the licensing process for Waterford 3, the staff requested additional information concerning the isolation arrangements and testing commitments for Penetrations 53 and 65 at Waterford 3.

The licensee's response described the arrangement by indicating that penetrations 53 and 65 each contain two instrument lines. One is considered an essential line sensing differential pressure across the containment vessel and provides a signal to actuate the vacuum relief system, the other monitors this differential pressure and provides an input to the plant computer. This other signal is considered to be non-essential. Whether or not the line is essential is important since the isolation requirements differ between essential and non-essential lines.

The response indicated that the essential line contains an excess flow check valve. The non-essential line also contains an excess flow check valve but a commitment was made to also add a solenoid operated valve during the first refueling outage. This added valve would be automatically closed on a containment isolation signal. This commitment to add the solenoid valves was included as a license condition in the Waterford 3 license.

In addition to the excess flow check valves and the solenoid valves, the licensee indicated that both lines formed a closed system outside containment, are seismically qualified, and terminate in an area exhausted by the filters of the Controlled Ventilation Area System. Based on this information, the staff concluded that the closed system was an acceptable barrier.

Therefore, the essential line was assumed to have two barriers; the excess flow check valve and the closed system. The non-essential line also had the same two barriers and a third barrier would be added during the first refueling outage. This barrier would be a solenoid operated automatic valve.

The licensee further indicated that with the above isolation arrangements for both lines, Type C leak testing was not required to be performed. The NRC in the Waterford 3 SER accepted the design configuration and testing requirements for the CVR instrument lines in penetrations 53 and 65. The commitment to install the solenoid valves was satisfied on January 19, 1987, however, the license condition was not removed.

The above situation continued until it was discovered by the licensee that the conditions for a closed system were not consistent with the as built situation. This required a reassessment of both the isolation arrangements as well as the testing requirements for both penetrations.

The reassessment separated the essential and non-essential lines, since the requirements are different. The discussion will begin with the essential lines in penetrations 53 and 65.

The essential lines do qualify for the criteria of Regulatory Guide (RG) 1.141. The significance of this criteria is to not require automatic containment isolation. The next criteria that was identified as applicable was General Design Criterion (GDC) 56. This GDC addresses the isolation requirements of penetrations that are connected to the containment. Generally, this GDC requires specific isolation valve types that would be acceptable as containment isolation barriers. However, instrument lines that are considered to be vital or essential to the overall safety of the power plant have further relaxations. Excess flow check valves, for example, are normally not considered as acceptable containment isolation barriers. However, GDC 56/57 allow specific relaxations for signals that are considered to be important enough that interruption of the signal represents a reduction to the plant safety. This line class is identified as essential.

This consideration allowed the use of an excess flow check valve as an acceptable containment isolation barrier. The next consideration was the determination of whether or not the system represented a closed system beyond the excess flow check valve. Normally, the system should be designed in accordance with Quality Group B standards as defined by RG 1.26. This means ASME Section III, Class 2. However, instrument lines are not covered by RG 1.26. Therefore, the licensee criteria classified these lines as ISA-67.02. The licensee considered that this classification was consistent with the endorsement by the NRC. The staff agrees that the above criteria is consistent with the requirements of Quality Group C (i.e., ASME, Section III, Class 3) which is consistent with the staff's interpretation of the criteria governing instrument lines. The staff conclusion is that the design meets all of the criteria of a closed system. Therefore, the staff concurs that the system is a closed system.

The staff concludes that the existing containment isolation provisions of the essential lines of penetrations 53 and 65 are acceptable without any hardware modifications.

Consideration of the non-essential lines is significantly different from the essential lines. Each line has a solenoid globe valve that will automatically close on a containment isolation signal. However, the second containment isolation barrier was in question. The remaining tubing beyond the solenoid valve is non-safety. In addition, the monitoring lines downstream of the isolation valves are not classified as seismic Category I. These combined variations cause the staff to conclude that a closed system is not present and therefore, the existing hardware arrangement does not meet the containment isolation requirements.

An important consideration is the acceptability of the excess flow check valve as a containment isolation barrier. The staff concludes that this barrier is unacceptable since it does not meet the criteria of RG 1.11. The acceptably of this type of barrier can only be justified for the essential signals. In order to comply with the criteria of Safety Guide 11, one must be able to show that the importance of the line signal is safety significant. For a non-safety line, this condition cannot be met. The relaxation of the use of an excess flow check valve as an acceptable barrier is therefore unacceptable. Therefore, an acceptable barrier in addition to the solenoid automatic valve is required.

The licensee recognized this limitation and proposed an additional valve. The licensee proposes to add a second solenoid automatic valve. This is acceptable to the staff.

There were two penetrations for the non-safety function. The licensee proposes that one of the lines be closed via closing the penetration with seal welding. For the other penetration, the license will add the automatic solenoid valve from the seal closed line as the second valve meeting the acceptance criteria of GDC 56. Based on the above, the staff finds the isolation criteria of penetrations 53 and 65 acceptable.

For the essential sensing instrument lines, the licensee indicated that the lines will be pressurized and leak tested at refueling intervals. This satisfies the testing of the closed system. The testing pressure will be 48 psig and the measured leakage will be added to the bypass leakage total. In addition, in light of the failures of the excess flow check valves, functional testing will be performed at refueling intervals.

For the non-essential lines, the licensee has indicated that local leak rate testing (LLRT) and inservice testing (IST) program testing will be performed on both automatic solenoid containment isolation valves. LLRT means Type C testing under the Appendix J program.

Based on the above information, the staff finds that the testing requirements have been satisfied and, therefore, are acceptable for both the essential and non-essential instrument lines in penetrations 53 and 65.

The licensee proposed to revise a License Condition (Attachment 1 to the License) to reflect the proposed changes. The proposed changes in the License Condition are acceptable to the staff.

Based on the above findings, the staff finds the proposed modifications to the lines in penetrations 53 and 65 acceptable. In addition, the testing criteria proposed for the barriers are also acceptable. The proposed changes in the License Condition are also 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 (61 FR 57484). 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: J. Kudrick

Date: May 20, 1997