

June 18, 2001

Mr. John T. Herron
Vice President Operations
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: CONTAINMENT VACUUM RELIEF VALVE ALLOWED
OUTAGE TIME EXTENSION (TAC NO. MB1253)

Dear Mr. Herron:

The Commission has issued the enclosed Amendment No. 171 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 February 19, 2001.

The amendment consists of changes to TS 3.6.5, "Vacuum Relief Valves," Limiting Condition for Operation to extend the allowed outage time from 4 hours to 72 hours to restore the vacuum relief line to OPERABLE status. In addition, the amendment deletes Attachment 1 to the Waterford 3 Operating License and revises Condition 2.C.1 to reflect the deletion.

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
Project Directorate IV, Section 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 171 to NPF-38
2. Safety Evaluation

cc w/encls: See next page

June 18, 2001

Mr. John T. Herron
Vice President Operations
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: CONTAINMENT VACUUM RELIEF VALVE ALLOWED
OUTAGE TIME EXTENSION (TAC NO. MB1253)

Dear Mr. Herron:

The Commission has issued the enclosed Amendment No. 171 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 February 19, 2001.

The amendment consists of changes to TS 3.6.5, "Vacuum Relief Valves," Limiting Condition for Operation to extend the allowed outage time from 4 hours to 72 hours to restore the vacuum relief line to OPERABLE status. In addition, the amendment deletes Attachment 1 to the Waterford 3 Operating License and revises Condition 2.C.1 to reflect the deletion.

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
Project Directorate IV, Section 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 171 to NPF-38
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	PDIV-1 Reading	RidsNrrDripRtsb (WBeckner)
RidsNrrDlpmPdiv (SRichards)		RidsOgcRp
RidsAcrsAcnwMailCenter	G.Hill(2)	RidsNrrDlpmPdivLpdiv1 (RGramm)
RidsNrrPMNKalyanam	RidsNrrLADJohnson	RidsRgn4MailCenter (KBrockman)
L.Hurley, RIV	D. Bujol, RIV	

Accession No.: ML011690339

*With comments

**No Legal Objection

OFFICE	PDIV-1/PM	PDIV-1/LA	NRR/SPLB*	OGC/NLO**	PDIV-1/SC
NAME	NKalyanam	DJohnson	GHubbard	NSt. Amour	RGramm
DATE	05/23/01	05/22/01	06/11/01	06/11/01	06/14/01

OFFICIAL RECORD COPY

ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 171
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 February 19, 2001, 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 paragraphs 2.C(1) and 2.C(2) of Facility Operating License No. NPF-38 are hereby amended to read as follows:
 - (1) Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3390 megawatts thermal (100% power) in accordance with the conditions specified herein.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 171 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
3. Attachment 1 of Facility Operating License No. NPF-38 is deleted.
4. 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

/RA/

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

Attachment: Changes to the Technical
Specifications and License

Date of Issuance: June 18, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 171

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications and License No. NPF-38 with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Technical Specifications

Remove

3/4 6-36

Insert

3/4 6-36

License

Page 4

Page 9

Attachment 1

Page 4

Page 9

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 171 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 February 19, 2001, Entergy Operations, Inc. (the licensee) proposed an amendment to the Technical Specifications (TS) for Waterford Steam Electric Station, Unit 3 (Waterford 3). The proposed amendment modifies TS 3.6.5, "Vacuum Relief Valves," Limiting Condition for Operation (LCO), which currently states, "The primary containment to annulus vacuum relief valves shall be OPERABLE with an actuation setpoint of less than or equal to 0.307 psid [pounds per square inch, differential] (8.5 inches H₂O)," to state "Two vacuum relief lines shall be OPERABLE." Further, the proposed amendment extends the allowed outage time from 4 hours to 72 hours for returning an inoperable vacuum relief line to OPERABLE status. In addition, the licensee proposes to delete Attachment 1 to the Waterford 3 Operating License and revise paragraph 2.C.1 to reflect the deletion. Other proposed changes affect Bases 3/4.6.5.

2.0 BACKGROUND

The containment vessel is designed for an external pressure differential of 0.65 pounds per square inch (psi) at 120 °F. During normal plant operation, the containment vessel is vented and cooled, as required, to eliminate pressure fluctuations caused by air temperature changes. The shield building annulus is maintained at a negative pressure by the annulus negative pressure system. An excessive negative pressure condition inside containment can occur if there is an inadvertent actuation of the containment spray system during normal operation. The containment vacuum relief system (CVRS) protects the containment vessel against negative pressure.

The containment pressure vessel contains two 100% vacuum relief lines, installed in parallel. The vacuum relief lines are 24-inch penetrations that connect the shield building annulus to the containment. The penetrations provide a flow path between the annulus and the containment. Each of the redundant lines making up the CVRS is functionally independent of one another. Each penetration has its own set of dual function in-series isolation valves that include one 24-inch pneumatically operated butterfly valve and one 24-inch check valve.

The butterfly valve's primary safety function is containment vacuum relief protection by mitigating the consequences of excessive negative pressure inside containment, and its secondary safety function is to function as a containment isolation valve. These valves are normally closed during normal power operation and will fail closed on a loss of power. These valves do not receive an automatic containment isolation signal to close, but would close once their primary safety function has been accomplished. The pneumatically operated butterfly valves are installed on the shield building annulus side of the containment penetration, and each butterfly valve is actuated by a separate pressure controller that senses the differential pressure between the containment and the annulus. Each butterfly valve is provided with an air accumulator enabling the valve to open following a loss of instrument air.

The check valves are installed on the containment side of the penetration to protect the containment against excessive external pressure, prevent backflow of containment air to the annulus, and serve as containment isolation valves. The check valves have magnetic latches that hold the valve swing plate firmly in the closed position until required to open, due to a small positive external containment differential pressure. The magnetic latches plus gravity assure the valves remain shut to fulfill their function as containment isolation valves.

The CVRS is designed to provide vacuum relief for the containment as well as containment isolation for maintaining containment pressure integrity during a postulated loss-of-coolant accident (LOCA) or main steam/feedwater line break. The containment isolation function of the CVRS is performed by the system's vacuum relief check valves and the pneumatically operated butterfly valves which have been designed to Safety Class 2 and Seismic Category I criteria to withstand the full containment design pressure.

The check valves are set to open at 1.1 inches water gauge (w.g.) differential. If the pressure differential between the annulus and the containment atmosphere continues to increase (containment pressure being lower than the annulus pressure), both butterfly valves are automatically opened by separate differential pressure transmitters at ≤ 8.5 inches w.g. to allow the air pressure in the annulus to bleed into the containment. Separate sets of differential pressure transmitters provide backup signals to open the butterfly valves at 10 inches w.g. The butterfly valves reclose before the differential pressure decreases to 6.25 inches w.g.

3.0 EVALUATION

One change to TS 3/4.6.5 would modify the applicability of the specification from vacuum relief "valves" to vacuum relief "lines." The Waterford 3 design assumes single failure of one line such that the other vacuum relief line is required to mitigate the limiting event. Failure of a line can result from failure of any component in the line, not just the valve. Therefore, the change clarifies the applicability of the requirement and is more conservative. This TS change is in conformance with TS 3.6.12, "Vacuum Relief Valves," in NUREG-1432, "Standard Technical Specifications - Combustion Engineering Plants," dated April 2000. The staff finds the change acceptable.

When one of the required vacuum relief lines is inoperable, the present TSs require that the inoperable line must be restored to operable status within 4 hours; the licensee proposes to increase the allowed outage time (AOT) to 72 hours.

An inadvertent containment spray system actuation during normal plant operation can reduce the pressure inside containment. Some of the conservative assumptions used for pertinent parameters in the analysis are: both trains of containment spray inadvertently start spraying water at the maximum flow rate, the spray water temperature is lower than the minimum Refueling Water Storage Pool temperature allowed by TS, all four containment fan coolers (CFC) operating at maximum heat removal rate, and one vacuum relief line fails to open.

With an initial pressure condition of 14.25 pounds per square, absolute, the analysis shows that, with one of the two redundant vacuum relief lines failing to open, the resultant peak containment calculated external pressure load is 0.49 psi, which is less than the design external pressure load equivalent of 0.65 psi. There is no single failure which could result in the operation of both spray trains and all four CFCs as was assumed for the purpose of this analysis.

The staff considers the proposed change to the AOT acceptable based on a qualitative judgment of the low probability that the system will be called upon to perform its design basis function with one train inoperable. This time period is also consistent with other LCOs for the loss of one train of a system required to mitigate the consequences of a LOCA or other design basis accident and the TS change is in conformance with TS 3.6.12, "Vacuum Relief Valves," in NUREG-1432.

Based on the above evaluation, the staff concludes that the licensee's TS change request on AOT extension is acceptable.

This amendment deletes Attachment 1 to the Waterford 3 Operating License and revises paragraph 2.C.1 to reflect the deletion. Attachment 1 to the License identifies items which must be completed to the Commission's satisfaction prior to startup following refueling outage number 8. Since the modification was completed in 1988-89 during refueling outage number 8, the staff finds the change acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Louisiana 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 (66 FR 27176, published May 16, 2001). 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

Dated: June 18, 2001

Waterford Generating Station 3

cc:

Administrator
Louisiana Department of Environmental Quality
7220 Bluebonnet Road
P. O. Box 82135
Baton Rouge, LA 70884-2135

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

Director
Nuclear Safety Assurance
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

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

General Manager Plant Operations
Waterford 3 SES
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

Licensing Manager
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

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

Resident Inspector/Waterford NPS
P. O. Box 822
Killona, LA 70066-0751

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

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 Services Commission
Baton Rouge, LA 70825-1697