

January 9, 1991

Docket No. 50-382

Mr. Ross P. Barkhurst
Vice President Operations
Entergy Operations, Inc.
Post Office Box B
Killona, Louisiana 70066

Dear Mr. Barkhurst:

SUBJECT: ISSUANCE OF AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3
(TAC NO. 77259)

The Commission has issued the enclosed Amendment No. 65 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 July 25, 1990, and as further clarified by letter dated November 7, 1990.

The amendment changes the Appendix A Technical Specifications by removing the surveillance requirements for the automatic closure interlocks and by adding surveillance requirements for the open permissive interlock and isolation valve position alarms on the shutdown cooling system.

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:

David L. Wigginton, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 65 to NPF-38
2. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION

Docket File	NRC/Local PDR	PD4-1 Reading	D. Wigginton(2)
M. Virgilio(MS13E4)	T. Quay	L. Berry	ACRS(10) (MSP315)
OGC(MS15B18)	D. Hagan(MNBB3206)	G. Hill(4)(MSP1-37)	
Wanda Jones(MNBB7103)	J. Calvo(MS11F22)	PD4-1 Plant File	
GPA/PA(MS2G5)	ARM/LFMB(MNBB4503)	T. Westerman,RIV	

c/p Berry

DFW 1/11

9101170010 910109
PDR ADDCK 05000382
PDR

OFC	: PD4-1/LA	: PD4-1/PM	: OGC	: PD4-1/D	:	:
NAME	: LBerry	: DWigginton:	: <i>STurb</i>	: <i>Quay</i>	:	:
DATE	: 1/5/90	: 1/21/90	: 1/2/90	: 1/9/90	:	:



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

January 9, 1991

Docket No. 50-382

Mr. Ross P. Barkhurst
Vice President Operations
Entergy Operations, Inc.
Post Office Box B
Killona, Louisiana 70066

Dear Mr. Barkhurst:

SUBJECT: ISSUANCE OF AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3
(TAC NO. 77259)

The Commission has issued the enclosed Amendment No. 65 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 July 25, 1990, and as further clarified by letter dated November 7, 1990.

The amendment changes the Appendix A Technical Specifications by removing the surveillance requirements for the automatic closure interlocks and by adding surveillance requirements for the open permissive interlock and isolation valve position alarms on the shutdown cooling system.

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,

A handwritten signature in cursive script, appearing to read "D. Wigginton".

David L. Wigginton, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 65 to NPF-38
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Ross P. Barkhurst
Entergy Operations, Inc.

Waterford 3

cc:

Mr. E. Blake
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, D.C. 20037

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
Office of Executive Director for
Operations
611 Ryan Plaza Drive, Suite 1000

Mr. Glen Miller, Administrator
Radiation Protection Division
Office of Air Quality and Nuclear Energy
Post Office Box 14690
Baton Rouge, Louisiana 70898

Resident Inspector/Waterford NPS
Arlington, Texas 76011
Post Office Box 822
Killona, Louisiana 70066

Mr. Gerald W. Muench
Vice President, Operations
Support
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286

President, Parish Council
St. Charles Parish
Hahnville, Louisiana 70057

William A. Cross
Bethesda Licensing Office
3 Metro Center
Suite 610
Bethesda, Maryland 20814

Mr. Donald C. Hintz
Executive Vice President and
Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286

Mr. Robert B. McGehee
Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, Mississippi 39205

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

Mr. J. R. McGaha, Jr.
General Manager Plant Operations
Entergy Operations, Inc.
P. O. Box B
Killona, Louisiana 70066

Mr. R. F. Burski, Director
Nuclear Safety
Entergy Operations, Inc.
317 Baronne Street
New Orleans, Louisiana 70112

Mr. Jerrold G. Dewease
Sr. Vice President
Planning & Assurance
Entergy Operations, Inc.
Post Office Box 31995
Jackson, Mississippi 39286-1995

Mr. L. W. Laughlin, Site Licensing
Support Supervisor
Entergy Operations, Inc.
P. O. Box B
Killona, Louisiana 70066



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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 65
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 July 25, 1990, as supplemented by letter dated November 7, 1990, 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. 65 , 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


for Thomas P. Gwynn, Acting Director
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 9, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 65

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.

REMOVE PAGES

3/4 5-3

3/4 5-4

INSERT PAGES

3/4 5-3*

3/4 5-4

*overleaf page; no change.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - MODES 1, 2, AND 3

LIMITING CONDITION FOR OPERATION

3.5.2 Two independent emergency core cooling system (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

- a. One OPERABLE high-pressure safety injection pump,
- b. One OPERABLE low-pressure safety injection pump, and
- c. An independent OPERABLE flow path capable of taking suction from the refueling water storage pool on a safety injection actuation signal and automatically transferring suction to the safety injection system sump on a recirculation actuation signal.

APPLICABILITY: MODES 1, 2, and 3*#.

ACTION:

- a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

*With pressurizer pressure greater than or equal to 1750 psia.

#With RCS average temperature greater than or equal to 500°F.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with the valves key-locked shut:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
a. 2SI-V1556 (SI-506A)	a. Hot Leg Injection	a. SHUT
b. 2SI-V1557 (SI-502A)	b. Hot Leg Injection	b. SHUT
c. 2SI-V1558 (SI-502B)	c. Hot Leg Injection	c. SHUT
d. 2SI-V1559 (SI-506B)	d. Hot Leg Injection	d. SHUT

- b. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the safety injection system sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:
1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
 2. Of the areas affected within containment at the completion of containment entry when CONTAINMENT INTEGRITY is established.
- d. At least once per 18 months by:
1. Verifying the action of the open permissive interlock (OPI) and isolation valve position alarms of the shutdown cooling system when the reactor coolant system pressure (actual or simulated) is between 392 psia and 422 psia.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 65 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 July 25, 1990, Entergy Operations, Inc. requested changes to the Technical Specifications for Waterford Steam Electric Station, Unit 3. Over the past several years, there has been increased effort to improve the reliability of the shutdown cooling system (SDCS) in pressurized water reactors. It was recognized that automatic closure interlocks (ACI) on suction isolation valves of the SDCS have been a frequent cause of loss-of-SDCS events. The proposed changes will remove the ACI and add administrative controls. The present Technical Specification requires the plant to verify operation of the SDCS ACI and open permissive interlock (OPI) at least once every 18 months. The changes would delete the surveillance requirement for the ACI and specifically identify the OPI. Testing of the SDCS isolation valve position alarms would be added to the surveillance requirement. These changes would be made in conjunction with a Station Modification (SM) removing the ACI function from the plant. By letter dated November 7, 1990, the licensee provided further clarifications to the proposed amendment. These clarifications did not change the substance of the proposed amendment and did not affect the staff's finding of no significant hazards considerations.

2.0 DISCUSSION

The staff review of this issue has focused on the effect that the proposed change has on the Event V (intersystem LOCA outside of containment) sequence and on the availability of the SDCS. We have reviewed the licensee's PRA analysis of the Event V sequence. We have reviewed and approved the removal of the ACI for several other plants. Waterford 3, however, is different from these plants in two respects. First, Waterford 3 is the first Combustion Engineering plant to request this modification. Second, the plants for which the removal of the ACI has been approved did not previously have the alarm on the SDCS isolation valve position. Thus, they were removing the ACI and adding the alarm as well as the administrative controls. Waterford 3 already had the alarm.

Combustion Engineering (CE) performed the evaluation of the removal of the ACI as a means to improve shutdown cooling for Waterford 3. The evaluation addresses the following guidelines, A through G, for ACI removal recommended by the NRC in a memorandum from B.W. Sheron dated January 28, 1985.

- A. The means available to minimize Event V concerns. Waterford 3 has a double barrier between the RCS and the SDCS. Alarms, procedural controls, and the OPI minimize the potential that the double barrier will not be available. Also, there is a third isolation valve in each SDC line.
- B. Alarms to Notify the Operator that SCS Suction Valves are Mispositioned. Visual and audible alarms are in the main control room to inform the operator that the SDCS suction valves are not fully closed when the RCS pressure is above the SDCS operating pressure. The alarms will be tested at each refueling and are designed to alert the operator of alarm circuit failure. Operating procedures instruct the operator to discontinue pressurization and close the isolation valves if they are not fully closed and pressure is increasing above the alarm setpoint.
- C. Verification of the Adequacy of Relief Valve Capacity. Original design calculations to ensure that relief devices in the SDCS suction lines had adequate capacity to prevent overpressurization of the SDCS as described in FSAR Section 9.3.6.2.2 have been reviewed to confirm that ACI was not credited in the selection of the limiting events or mitigation of the resulting transients.
- D. Means other than ACI to Ensure that both Isolation Valves are Closed. Alarm, position indication, procedures, and training are used to ensure that the isolation valves are closed.
- E. Assurance that the OPI is not Affected by ACI removal. The OPI function will be maintained in its present form, however, the pressure at which the OPI function will be verified will be changed to just above the 392 psia OPI setpoint.
- F. Assurance that Valve Position Indication will Remain Available in the Control Room After ACI removal. The modification provides for continuous valve position indication on the main control board. This indication will be present even when the valve position is locked out during power operation. The position indication is independent of the alarms.
- G. Assessment of the Effect of ACI Removal on SDCS Availability and LTOP. CE performed an analysis on the impact of removing the ACI from the SDCS. The analysis was performed to determine the change in Interfacing System LOCA (ISLOCA) frequency, the change in SDCS unavailability, and the impact on mitigating LTOP events due to removal of the ACI.

ISLOCA Results

The results indicate no difference in ISLOCA probability for the two cases.

SDCS Unavailability Results

<u>SDCS Configuration</u>	<u>SDCS Unavailability</u>
SCS suction valves with ACI	5 E-02
SDCS suction valves without ACI	3 E-02

The change in SDCS unavailability represents about a 40% decrease in unavailability during refueling outages.

Mitigating LTOP Events

Waterford 3 employs six inch relief valves in the SDCS with sufficient capacity to mitigate LTOP events that may occur during shutdown cooling operations. Because these valves are located downstream of the inside containment SDCS suction valves, inadvertent closure of the SDCS valves by ACI will isolate the relief valves and eliminate protection of the RCS piping if an LTOP event occurs. Since the removal of the ACI decrease the unavailability of the SDCS, the number of inadvertent closures of the SDCS decreases and the availability of the relief valves (for LTOP protection) increases.

3.0 SUMMARY

The staff finds that the removal of the ACI at the Waterford Steam Electric Station, Unit No. 3 produces a safety benefit in the SDCS availability and no change in the ISLOCA frequency. Thus, the total impact is a safety benefit and is acceptable for Waterford.

4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Radiation Protection Division Department of Environmental Quality, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. 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 exposures. 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.

Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 staff 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, and (2) 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.

Dated: January 9, 1991

Principal Contributor: M. Chatterton