

December 17, 1991

Mr. William T. Cottle
Vice President, Operations GGNS
Entergy Operations, Inc.
Post Office Box 756
Port Gibson, Mississippi 39150

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE
NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING
CONTAINMENT PURGE SYSTEM (TAC NO. M80388)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 84 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated May 10, 1991.

The amendment changes the Technical Specifications (TS) and Bases for the containment purge system by replacing the cumulative time limitation on the system operation with safety-related criteria. Alternative means are allowed for isolating a penetration when isolation valves in the system are inoperable.

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

Paul W. O'Connor, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 84 to NPF-29
- 2. Safety Evaluation

cc w/enclosures:
See next page

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

December 17, 1991

Docket No. 50-416

Mr. William T. Cottle
Vice President, Operations GGNS
Entergy Operations, Inc.
Post Office Box 756
Port Gibson, Mississippi 39150

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE
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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 that reads "Paul W. O'Connor".

Paul W. O'Connor, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

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See next page

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Grand Gulf Nuclear Station

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

ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

MISSISSIPPI POWER AND LIGHT COMPANY

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 84
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated May 10, 1991, 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; changes to paragraph 2.C.(2), and deletion of paragraph 2.C.(16) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

(2) Technical Specifications

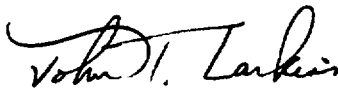
The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 84, are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(16) Containment Purge (Section 6.2.4, SSER #5)

(Deleted)

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John T. Larkins, 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: December 17, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 84

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the License and the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES

License page 8

3/4 6-12

B 3/4 6-2

INSERT PAGES

License page 8

3/4 6-12

B 3/4 6-2

(b) Natural circulation shall be prohibited as an operating mode.

(14) Loose Parts Monitoring (Section 4.4.1, SER)

Prior to startup following the first refueling outage, MP&L shall submit an evaluation of the loose parts monitoring system to address conformance to Regulatory Guide 1.133, Revision 1, dated May 1981.

(15) Scram Discharge Volume (Section 4.6, SER)

Prior to startup following the first refueling outage, MP&L shall incorporate the following additional modifications into the scram discharge volume system:

(i) Redundant vent and drain valves, and

(ii) Diverse and redundant scram instrumentation for each instrumented volume, including both delta pressure sensors and float sensors.

(16) Containment Purge (Section 6.2.4, SSER #5)

(Deleted)

(17) Containment Pressure Boundary (Section 6.2.8, SER)

Prior to startup following the first refueling outage, MP&L shall replace the feedwater check valve disc with a disc made from a suitable material.

(18) Pressure Interlocks on Valves Interfacing at Low and High Pressure
(Section 6.3.4, SSER #2)

Prior to startup following the first refueling outage, MP&L shall implement isolation protection against overpressurization of the low pressure emergency core cooling systems (RHR/LPCI and LPCS) at the high and low pressure interface containing a check valve and a closed motor-operated valve.

CONTAINMENT SYSTEMS

CONTAINMENT AVERAGE AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.8 Containment average air temperature shall not exceed 90°F.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

With the containment average air temperature greater than 90°F, reduce the average air temperature to within the limit within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.8 The containment average air temperature shall be the arithmetical average of the temperatures at the following locations and shall be determined to be within the limit at least once per 24 hours:

	<u>Elevation</u>	<u>Azimuth</u>
a.	~119'-0"	20° < A < 70°
b.	~119'-0"	110° < A < 160°
c.	~119'-0"	200° < A < 250°
d.	~119'-0"	290° < A < 340°
e.	~139'-0"	20° < A < 70°
f.	~139'-0"	110° < A < 160°
g.	~139'-0"	200° < A < 250°
h.	~139'-0"	290° < A < 340°
i.	~208'-0"	20° < A < 70°
j.	~208'-0"	110° < A < 160°
k.	~208'-0"	200° < A < 250°
l.	~208'-0"	290° < A < 340°
m.	~240'-0"	20° < A < 70°
n.	~240'-0"	110° < A < 160°
o.	~240'-0"	200° < A < 250°
p.	~240'-0"	290° < A < 340°

CONTAINMENT SYSTEMS

CONTAINMENT PURGE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.9 The containment purge system supply and exhaust isolation valves shall be OPERABLE and either the 20 inch or the 6 inch purge system may be in operation; however, the 20 inch purge system shall not be in operation nor shall the 20 inch valves be open except for containment pressure control, for ALARA and air quality considerations for personnel entry, or for surveillance or special testing on the purge system that requires the isolation valve(s) to be open.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

- a. With a containment purge system supply and/or exhaust isolation valve(s) inoperable except for the condition covered in Action C, close the inoperable valve(s) or otherwise isolate the penetration(s) within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With the 20 inch supply and/or exhaust isolation valve(s) open except as allowed by Specification 3.6.1.9, close the open 20 inch valve(s) or otherwise isolate the penetration(s) within four hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With a containment purge supply and/or exhaust isolation valve(s) with resilient material seals having a measured leakage rate exceeding the limit of Surveillance Requirement 4.6.1.9.2, restore the inoperable valve(s) to OPERABLE status or otherwise isolate the penetration(s) so that the measured leakage rate does not exceed the limit of Specification 4.6.1.9.2 within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.9.1 At least once per 31 days each 20 inch containment purge system supply and exhaust isolation valve shall be verified closed.*

4.6.1.9.2 At least once per 92 days each containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to $0.01 L_a$ when pressurized to P_a .

*However, the valves need not be closed and may be open as allowed by Specification 3.6.1.9.

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 PRIMARY CONTAINMENT INTEGRITY

PRIMARY CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure of 11.5 psig, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_d during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

Operating experience with the main steam line isolation valves has indicated that degradation has occasionally occurred in the leak tightness of the valves; therefore the special requirement for testing these valves.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J to 10 CFR 50 with the exception of exemption(s) granted for testing the airlocks after each opening.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on PRIMARY CONTAINMENT INTEGRITY and the containment leakage rate given in Specifications 3.6.1.1 and 3.6.1.2. The specification makes allowances for the fact that there may be long periods of time when the air locks will be in a closed and secured position during reactor operation. Only one closed door in each air lock is required to maintain the integrity of the containment. Verification that each air lock door inflatable seal system is OPERABLE by the performance of a local leak-detection test for a period of less than 48 hours is permissible if it can be demonstrated that the leakage rate can be accurately determined for this shorter period. (This is in accordance with Sections 6.4 and 7.6 of ANSI N45.4-1972.)

3/4.6.1.4 MSIV LEAKAGE CONTROL SYSTEM

Calculated doses resulting from the maximum leakage allowance for the main steamline isolation valves in the postulated LOCA situations would be a small fraction of the 10 CFR 100 guidelines, provided the main steam line system from the isolation valves up to and including the turbine condenser remains intact. Operating experience has indicated that degradation has occasionally occurred in the leak tightness of the MSIV's such that the specified leakage requirements have not always been maintained continuously. The requirement for the leakage control system will reduce the untreated leakage from the MSIVs when isolation of the primary system and containment is required.

CONTAINMENT SYSTEMS

BASES

3/4.6.1.5 FEEDWATER LEAKAGE CONTROL SYSTEM

The feedwater leakage control system consists of two independent subsystems designed to eliminate through-line leakage in the feedwater piping by pressurizing the feedwater lines to a higher pressure than the containment and drywell pressure. This ensures that no release of radioactivity through the feedwater line isolation valves will occur following a loss of all offsite power coincident with the postulated design basis loss-of-coolant accident.

3/4.6.1.6 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the unit. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 11.5 psig in the event of a LOCA. A visual inspection in conjunction with Type A leakage tests is sufficient to demonstrate this capability.

3/4.6.1.7 CONTAINMENT INTERNAL PRESSURE

The limitations on containment-to-Auxiliary Building and Enclosure Building differential pressure ensure that the containment peak pressure of 11.5 psig does not exceed the design pressure of 15.0 psig during LOCA conditions or that the external pressure differential does not exceed the design maximum external pressure differential of 3.0 psid. The limit of -0.1 to 1.0 psid for initial containment-to-Auxiliary Building and Enclosure Building differential pressure will limit the containment pressure to 11.5 psid which is less than the design pressure and is consistent with the safety analysis.

3/4.6.1.8 CONTAINMENT AVERAGE AIR TEMPERATURE

The limitation on containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 185°F during LOCA conditions and is consistent with the safety analysis.

3/4.6.1.9 CONTAINMENT PURGE SYSTEM

The continuous use of the containment purge lines during all operational conditions is restricted to the 6-inch purge supply and exhaust isolation valves; whereas, continuous containment purge using the 20-inch purge system is limited to only OPERATIONAL CONDITIONS 4 and 5. Intermittent use of the 20-inch purge system during OPERATIONAL CONDITIONS 1, 2 and 3 is restricted to the following:

- a. Containment pressure control,
- b. ALARA and air quality considerations for personnel entry due to: high explosive gas concentration, low oxygen concentration, high airborne particulate activity, high gaseous radioactivity, smoke or fumes, or
- c. Surveillance or special testing on the purge system that requires the isolation valve(s) to be open.

The design of the 6-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated May 10, 1991, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Technical Specifications (TS) for the Grand Gulf Nuclear Station, Unit 1 (GGNS). The requested changes were intended to address a license condition on the containment purge system.

The containment purge system has a high volume purge (HVP) with 20-inch supply and exhaust valves and a low volume purge (LVP) with 6-inch supply and exhaust valves. During the Operating License review the staff concluded that, for safety reasons, purging should be minimized during power operation (NUREG-0831, "Safety Evaluation Report (SER) Related to the Operation of Grand Gulf Nuclear Station, Units 1 and 2"). The licensee had proposed a limit of 2000 hours per year for purge system operation to reduce drywell airborne radioactivity levels for personnel entry and to control drywell pressure. The staff acknowledged the potential need to purge but conditioned the GGNS operating license to limit the use for the HVP to 1000 hours per year until operational experience was gained and reported to the NRC. The present Technical Specifications (TS 3/4.4.6.1.9) and GGNS Operating License Condition 2.C(16) reflect these requirements.

By letter dated October 3, 1986, the licensee provided a report documenting data from the first cycle of operation on the use of the purge system. Since the data gathered during Cycle 1 was inconclusive, the licensee committed to provide follow-up reports on a per-cycle basis until sufficient data was obtained and valid conclusions could be drawn regarding the use of the purge system. On December 31, 1987, the licensee provided the results of Cycle 2.

By letter dated December 6, 1988, the licensee submitted proposed criteria for limiting the use of the containment purge system during operation and also submitted proposed changes to the TS.

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2.0 EVALUATION

The staff reviewed the December 6, 1988, submittal and provided the results of this review in a safety evaluation enclosed with a letter to the licensee dated December 26, 1990. In this safety evaluation the staff concluded that six of the eight proposed controls on the purge system usage were acceptable and also proposed to reduce the limit from 1000 hours per year to 400 hours per year.

The licensee's response to the staff's December 26, 1990, letter was dated May 10, 1991. In this letter the licensee revised its proposed conditions for purging, restricting the conditions to the following:

- a. Containment pressure control;
- b. ALARA and air quality considerations for personnel entry due to high explosive gas concentration, low oxygen concentration, high airborne particulate activity, high gaseous radioactivity, smoke, or fumes; or
- c. Surveillance or special testing on the purge system that requires the isolation valve(s) to be open.

The staff has reviewed the licensee's proposed restrictions on the use of the purge system and concludes that the specified criteria ensure appropriate controls and that use of the HVP purge system will be minimized and limited to safety-related reasons. Consequently, the staff finds the licensee's proposed changes acceptable and finds that the intent of License Condition 2.C.(16) has been satisfied and that this License Condition is removed.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi 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, changes in surveillance requirements, and changes the license. 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 (56 FR 57695). 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 Contributors: J. Kudrick
T. Quay

Date: December 17, 1991