Entergy Operations

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May 10, 1991

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Containment Purge Program
Proposed Amendment to the Operating License (PCOL-91/08)

GNRO-91/00064

Gentlemen:

Entergy Operations, Inc. is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station Operating License. The proposed amendment requests the revision of the Technical Specification (TS) that governs the containment purge system.

Proposed containment purge criteria were provided to the NRC Staff in a letter dated December 6, 1988. By letter dated December 26, 1990, the NRC Staff completed its review of the proposed criteria. In satisfaction of the commitment in the December 6, 1988 letter, this amendment request for long-term containment purge criteria is submitted.

Both GGNS and the NRC Staff have worked diligently to reach a resolution on this issue. We believe that this proposal will support the long-term efficient operation of GGNS consistent with safety and the Commission's Interim Policy Statement on Technical Specification Improvements.

It has been GGNS's practice to limit purge operation during power operation. It is also our position that time restrictions on purge system operation provide no additional safety benefit. We believe that the Staff's conclusion that purge be restricted to 400 hours per year was reached without benefit of a backfit review. If, after review of this proposal, the Staff still maintains that a time limit be applied to purge system operation, we request that the Staff conduct and document a backfit evaluation demonstrating a substantial safety benefit associated with a 400 hour per year purge limit.

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In accordance with the provisions of 10CFR50.4, the signed original of the requested amendment is enclosed. Attachment 2 provides the discussion and justification to support the requested amendment.

This amendment has been reviewed and accepted by the Plant Safety Review Committee and the Safety Review Committee.

Based on the guidelines given in 10CFR50.92, Entergy Operations, Inc. has concluded that this proposed amendment involves no significant hazards considerations.

Yours truly,

WTC/SBM/ams
attachments: 1. Affirmation per 10CFR50.30
2. GGNS PCOL-91/08
cc: Mr. D. C. Hintz (w/a)
Mr. J. Mathis (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
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Mr. Stewart D. Ebneter (w/a)
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cc: (continued)
Mr. L. L. Kintner, Project Manager (w/a)
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Dr. Alton B. Cobb (w/a)
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF

MISSISSIPPI POWER & LIGHT COMPANY
and
SYSTEM ENERGY RESOURCES, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
and
ENTERGY OPERATIONS, INC.

AFFIRMATION

I, W. T. Cottle, being duly sworn, state that I am Vice President, Operations GGNS of Entergy Operations, Inc.; that on behalf of Entergy Operations, Inc., System Energy Resources, Inc., and South Mississippi Electric Power Association I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this application for amendment of the Operating License of the Grand Gulf Nuclear Station; that I signed this application as Vice President, Operations GGNS of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

W. T. Cottle

STATE OF MISSISSIPPI
COUNTY OF CLAIBORNE

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 10 day of May, 1991.

(SEAL)

Patricia Monaghan
Notary Public

My commission expires:
My Commission Expires July 3, 1993

PROPOSED CHANGE TO THE OPERATING LICENSE

- REVISIONS TO TS 3/4.6.1.9 & BASES 3/4.6.1.9 -

(GGNS PCOL-91/08)

A. SUBJECT

1. NL-91/07 Containment Purge Program

2. Affected Technical Specifications:

   a. Limiting Condition for Operation (LCO) 3.6.1.9 - page 3/4 6-12

   b. Action Statements - page 3/4 6-12

   c. Surveillance Requirement 4.6.1.9.1 - page 3/4 6-12

   d. Bases 3/4.6.1.9 - page B 3/4 6-2

B. DISCUSSION

1. The Mark III Containment design is different from earlier BWR containment designs in that many reactor coolant support systems are located inside the primary containment. Although desirable from an accident release pathway perspective, this design requires frequent personnel access to containment during operation for surveillances, maintenance and other routine activities. For this reason, exceptional air quality in the containment must be maintained at all times.

2. To support this design, two independent Containment Purge subsystems of the Containment Cooling System are used to provide filtered air directly to the containment through separate supply and exhaust lines with redundant isolation valves. The 6-inch diameter line subsystem, a low volume purge (LVP) rated at 500 cfm, is used to control containment atmosphere quality and for required surveillances and containment pressure control. The 20-inch diameter line subsystem, a high volume purge (HVP) rated at 6000 cfm, is used, with restrictions, in Operational Conditions 1, 2 and 3 to reduce airborne activity levels for personnel access requirements.

3. The current Grand Gulf Nuclear Station (GGNS) Technical Specification (TS) 3.6.1.9 limits HVP use in Operational Conditions 1, 2 and 3 to 1000 hours per 365 days and prohibits the use of LVP and HVP simultaneously. LVP use is unrestricted in all Operational Conditions unless HVP is in use.

4. On October 3, 1984, GGNS submitted the first fuel cycle purge report as per License Condition 2.C.(16). Due to inconclusive data, GGNS committed to providing followup reports per cycle until sufficient data would support valid conclusions on long-term purge criteria.

5. The results of the Cycle 2 containment purge monitoring program were reported in a December 31, 1987 submittal. Based on the data, GGNS proposed to procedurally restrict LVP use, to continue HVP operation in accordance with the current TS and to discontinue the containment purge monitoring reports.

6. The NRC Staff requested additional information regarding containment purge use in a letter dated August 9, 1988 in order to complete its review. In this letter, the Staff concurred with the proposal to discontinue the containment monitoring reports since sufficient data had been generated on which to base purge criteria. The NRC Staff also requested a revised TS to reflect the findings of the data collected during Cycle 2 operation.

7. By letter dated December 6, 1988, GGNS submitted a responce to the NRC Staff's request which contained a proposed containment purge program and informal TS revisions for NRC review and comment.

8. The NRC Staff provided a Safety Evaluation based on its completed review of the containment purge submittals in a letter dated December 26, 1990. The NRC Staff concluded that TS 3.6.1.9 should be revised to limit purge system operation to 400 hours per year and only for safety-related reasons.

9. In accordance with the commitment to propose a TS change after the receipt of the NRC Staff's evaluation of the proposed containment purge program and after further evaluation, GGNS submits this long-term containment purging program.

10. TS changes that reflect the expected use of the containment purge system are proposed:

    a. LCO 3.6.1.9 is revised to remove the limit of 1000 hours per 365 days for the operation of the 20 inch purge system or for the opening of the 20 inch isolation valves in Operational Conditions 1, 2 and 3. The time limit is replaced with criteria to operate the 20 inch purge system or to open the 20 inch valves.

    b. Surveillance Requirement 4.6.1.9.1 to determine the cumulative time that the 20 inch purge system is in operation or the 20 inch isolation valves are open is replaced with a requirement to verify at least once per 31 days that the 20 inch isolation valve(s) are closed; the valves may be open per revised LCO 3.6.1.9.

c. Action 3.6.1.9.b revises the conditions for which corrective measures must be taken if the 20 inch isolation valve(s) are open. The limit of 1000 hours per year is replaced with a statement that denotes that opening the 20 inch isolation valves is controlled per LCO 3.6.1.9.

d. Action 3.6.1.9.c is revised to add the option to isolate a penetration that contains a containment supply or exhaust valve(s) with a leakage rate exceeding the TS limit so that the measured leakage rate does not exceed the TS limit of Surveillance Requirement 4.6.1.7.2. In addition, a clarifying statement is added to Action 3.6.1.9.a to delineate Action a from Action c.

e. Bases 3/4.6.1.9 is revised to delete the statement that the 20 inch purge system is used to reduce the airborne activity levels and shall not be used for more than 1000 hours per year. This statement is replaced with the criteria that govern the use of the 20 inch purge system.

11. The affected TS and associated Bases pages are attached and marked up to reflect the proposed changes described above.

C. JUSTIFICATION

LIMITING CONDITION FOR OPERATION 3.6.1.9

1. Existing LCO 3.6.1.9 allows the use of the 6 inch or the 20 inch containment purge system, but the 20 inch purge system cannot operate nor can the 20 inch containment isolation valves be open for more than 1000 hours per year in Operational Conditions 1, 2 and 3. The proposed specification substitutes qualification for quantification and requires that the 20 inch purge system not be operated except for specified reasons. This method of control is preferable since it ensures that the 20 inch system is used only to allow the control of parameters related to safety, such as air quality for personnel access, containment pressure control or for testing on the purge system, while minimizing the time that the HVP system is in operation.

2. Limiting the operation of the 20 inch purge system to a specified number of hours per year in Operational Conditions 1, 2 and 3 provides an unreasonable restraint given the unpredictability of events which might require the use of the HVP. Restricting the use of the 20 inch purge system by criteria, however, provides flexibility in plant operations while limiting the use of the HVP.

3. The proposed purge program is based on recent representative plant data. In 1990, the containment purge system was used almost ten times more than it was used in 1987. This increase is mainly attributed to purge system operation to reduce high airborne activity levels in containment. The chart below compares the purge system use in 1990 to 1987. The 1987 data which was collected for a period of 262 days during Cycle 2 operation has been converted to equivalent yearly hours.

Containment Purge System Use in Hours

	1987	1990
HVP	16	256
LVP	102	831
Total use	118	1087

4. The specification that the 6 inch and the 20 inch containment purge systems will not operate simultaneously is retained.

SURVEILLANCE REQUIREMENT 4.6.1.9.1

5. At least once per 31 days, the proposed Surveillance Requirement 4.6.1.9.1 requires the verification that the 20 inch containment purge system isolation valves are closed; these valves may be open per LCO 3.6.1.9. This proposed requirement will take the place of the existing surveillance to determine at least once per 7 days the cumulative time that the 20 inch purge system has been in operation and the isolation valves have been open. Since the operation of the 20 inch purge system is significant only because the containment isolation valves are open, verification that the valves are closed is sufficient for control. Because the opening of the 20 inch valves should be required only intermittently and under strict criteria, a monthly frequency is sufficient for verification.

ACTION 3.6.1.9.b

6. Since Surveillance Requirement 4.6.1.9.1 verifies that the 20 inch isolation valves are closed, it is more appropriate for the Action statement to address valve position rather than the operation of the purge system. Therefore, the condition that the 20 inch containment purge system is in operation is deleted in the proposed Action 3.6.1.9.b. In addition, the statements associated with the existing hourly restrictions are deleted due to the proposed removal of these restrictions as part of the long-term containment purge program. Therefore, the proposed Action specifies the measures to be taken if the 20 inch containment isolation valves are found open except when open in accordance with LCO 3.6.1.9. The existing corrective actions and shutdown requirements are retained.

ACTION 3.6.1.9.c

7. Reevaluation of the containment purge TS noted an inconsistency between Action 3.6.1.9.c and the Action Statements of TS 3.6.4 which address the corrective measures required after determining that a containment isolation valve(s) is inoperable. The Actions of TS 3.6.4 dictate the restoration of the affected valve(s) to Operable or the isolation of the penetration that contains the inoperable valve(s); the only avenue available in Action 3.6.1.9 is the restoration of the valve(s) to Operable. In order to avoid an unnecessary plant shutdown that would be mandated in the event that a leaking containment isolation valve(s) could not be restored to Operable status within the specified time interval, the option to isolate a penetration that contains a leaking valve(s) so that the measured leakage rate does not exceed the TS limit of Surveillance Requirement 4.6.1.9.2 is added to Action 3.6.1.9.c. In order to clarify the existing Actions, a statement that excludes the condition of Action 3.6.1.9.c is added to Action 3.6.1.9.a.

8. The isolation of a penetration so that the measured leakage rate does not exceed the TS limit is an acceptable method of isolating an inoperable containment valve(s) and serves the same general purpose as restoring an inoperable isolation valve(s) to Operable.

9. The existing shutdown requirements are retained.

BASES 3/4.6.1.9

10. In the proposed Bases 3/4.6.1.9, the criteria for intermittent use of the 20 inch purge system during Operational Conditions 1, 2 and 3 are given. The purge system may be used to control containment pressure, to allow personnel entry based on ALARA and air quality considerations and to perform surveillance and special testing on the purge system that requires the isolation valves to be open. ALARA and air quality considerations include: high explosive gas concentration, low oxygen concentration, high airborne particulate activity, high gaseous radioactivity, smoke or fumes. Surveillance and special testing includes evolutions such as surveillances, modifications, maintenance, retests, troubleshooting or post maintenance testing.

11. The NRC Staff, as documented in their December 26, 1990 Safety Evaluation, has concluded that these criteria have safety-related importance and are justifiable reasons for operating the purge system.

D. NO SIGNIFICANT HAZARDS CONSIDERATIONS

1. Entergy Operations, Inc. is proposing with this amendment request a revision to TS 3/4.6.1.9 which:

   1) Replaces the current time restriction on the operation of the 20 inch containment purge system with specified criteria.

   2) Modifies the Action Statement to allow the isolation of a containment penetration containing an isolation valve(s) with a leak rate exceeding the TS limit.

   This proposal provides the long-term containment purge system criteria and corrects an inconsistency in the isolation of an inoperable containment isolation valve(s).

2. The Commission has provided standards for determining whether a no significant hazards consideration exists as stated in 10CFR50.92(c). A proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability of consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

3. Entergy Operations has evaluated the no significant hazards considerations in its request for a license amendment. In accordance with 10CFR50.91(a), Entergy Operations is providing the analysis of the proposed amendment against the three standards in 10CFR50.92:

   a. No significant increase in the probability or consequences of an accident previously evaluated results from this change.

      (1) The UFSAR does not assume a malfunction or failure of the containment purge system or any component thereof to be an initiating event in any accident analysis nor does it consider misoperation of the system to be an initiating event. The proposed changes will not alter or otherwise change these assumptions. Therefore, the proposed changes do not increase the probability of an accident previously evaluated.

(2) The UFSAR contains an evaluation of the radiological consequences of a postulated LOCA conservatively assuming that the 20 inch purge valves are open for 5 seconds (4 second isolation time plus 1 second for conservatism) following the onset of the accident. Although the proposed change could allow the HVP valves to be open for a longer period of time than is allowed by the current TS, these proposed changes do not decrease the isolation time associated with the containment isolation valves nor violate the assumptions or results of this evaluation. Furthermore, the specified criteria will limit the use (hence the cumulative time) of the HVP to only those pre-approved uses. Therefore, the consequences of an accident previously evaluated are not increased.

(3) Therefore, the probability or consequences of previously evaluated accidents are not increased.

b. The change would not create the possibility of a new or different kind of accident from any previously analyzed.

(1) The proposed changes will not require the addition, deletion or modification of any plant hardware and no new modes of plant operation or testing are introduced.

(2) The method by which any safety-related system performs its function will not be changed. In addition, the methods for verifying component or system operability will not change.

(3) Therefore, operating the plant with the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

c. This change would not involve a significant reduction in the margin of safety.

(1) The proposed changes do not affect the methodology used in the offsite dose analysis nor the acceptance criteria associated with any accident analysis.

(2) The proposed changes do not affect the 4-second isolation time of the 20 inch containment purge valves.

(3) This change, therefore, will not involve a reduction in the margin of safety.

4. Based on the above evaluation, operation in accordance with the proposed amendment involves no significant hazards considerations.