ENTERGY

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February 7, 1992

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
Termination of the Cooling Tower Drift Program
Proposed Amendment to the Operating License (PCOL-92/01)

GNRO-92/00017

Gentlemen:

Entergy Operations, Inc. is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License. The proposed amendment requests termination of the Cooling Tower Drift Program of the Environmental Protection Plan and changes references to the program to reflect the termination. The program was required to continue for three years of operation to determine the deposition of drift containing dissolved minerals on the landscape caused by the operation of the evaporative cooling tower. No statistically significant effect upon the salt deposition rate for those chemical species evaluated can be attributed to operation of the GGNS cooling tower. Entergy Operations, Inc. therefore believes that the intent of the Cooling Tower Drift Program has been met.

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 presented in 10CFR50.92, Entergy Operations has concluded that this proposed amendment involves no significant hazards considerations.

Yours truly,

WTC/WBB/mtc
attachments: 1. Affirmation per 10CFR50.30
2. GGNS PCOL-92/01
cc: (See Next Page)

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cc: Mr. D. C. Hintz (w/a)
Mr. J. L. Mathis (w/a)
Mr. R. B. McGehee (w/a)
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Dr. Alton B. Cobb (w/a)
State Health Officer
State Board of Health
P.O. Box 1700
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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 7 day of February, 1992.

(SEAL)

Notary Public

My commission expires:

My Commission Expires July 3, 1993

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A. SUBJECT

1. PCOL 92/01 Termination of the Cooling Tower Drift Program

2. Affected requirements:

   a. Section 4.2.2 of the Environmental Protection Plan, Cooling Tower Drift Program, Pages 4-2 and 4-3

   b. Section 2.2 of the Environmental Protection Plan, Page 2-1

B. DISCUSSION

1. Entergy Operations, Inc. is requesting revisions to the Environmental Protection Plan (EPP) which will terminate the Cooling Tower Drift Program.

2. Section 4.2.2 of the EPP states: "This program is to be implemented at least 3 months prior to the operation of Unit 1 above 5% power and will be continued for three years of operation. If no statistically significant amounts of the analyzed components are detected during the time period, then a proposal can be made to the NRC to terminate the program."

3. The present program was initiated in 1982. The results of the program were evaluated annually to determine the effect upon the salt deposition rate. This was reported each year to the NRC in the Annual Environmental Operating Report. Based on the data collected, Entergy Operations has determined that there was no statistically significant effect on the salt deposition rate. Therefore, the intent of the Cooling Tower Drift Program has been fulfilled.

4. A request to terminate the program was previously submitted without a change to the EPP in a letter to the NRC (GNRO-91/00029) dated February 19, 1991.

C. JUSTIFICATION

Eight sampling sites were utilized to measure cooling tower drift deposition. Six of the eight sampling sites were located in areas where maximum salt deposition was predicted. These areas were identified from the Bechtel Salt Deposition Model developed for the GGNS Final Environmental Report. The remaining two sampling sites were control sites (i.e., located offsite), one of which was added in 1985. Four of the sampling sites were equipped with replicate sampling devices and two of the replicate sampling sites had triplicate sampling devices.

Fallout samples were collected on a quarterly basis and analyzed for ten constituents:

- Calcium
- Sodium
- Phosphate
- Chloride
- Sulfate
- Magnesium
- Iron
- Nitrate
- Fluoride
- Total dissolved solids

Results were reported to the NRC in the Annual Environmental Operating Report.

The criteria for the Cooling Tower Drift Program are contained in Paragraph 4.2.2 of the EPP:

> If statistically significant amounts of the analyzed components, at the 95% confidence level as determined by a repeated-measure analysis of variance, are obtained between the preoperational and operational samples, then a supplemental program will be implemented to determine if the increase in drift is of biological significance.

Entergy Operations reviewed the results of the annual evaluation of samples collected between the years 1983 and 1988 to determine if the cooling tower drift had a statistically significant effect upon salt deposition rate.

An understanding of the chronology of major events which impacted the results of the salt deposition analysis is essential in understanding the analysis. The dates of these events are listed below:

August 18, 1982	Achieved Critical Power
September 25, 1983	Started Low Power Testing
November 8, 1983	Stopped Low Power Testing
April 22, 1984	Resumed Low Power Testing
August 31, 1984	Received Full Power Operating License
May 12, 1985	Achieved 100% Power
July 1, 1985	Commenced Commercial Operation
January, 1987	Replaced Cooling Tower Media

The years 1983 and 1984 represent the salt deposition rates before plant commercial operation. The years 1985 and 1986 represent the salt deposition rates with clay block fill material in the cooling tower. During the period when clay block fill material was in use, GGNS experienced visible drift carryover deposition onto site parking lots and buildings in close proximity to the cooling tower. Following the change of fill material visible carryover from the cooling tower was greatly reduced. The years 1987 and 1988 represent the salt deposition rates with a new plastic fill material installed in the cooling tower.

The analysis performed annually on the data utilized a statistical technique called Analysis of Variance (ANOVA). This technique is a well documented and accepted method for determining statistical significance between various populations for major potential influence (period and location). Confidence limits were established at 95% in accordance with the requirements of the EPP.

The ANOVA analysis was applied in two ways on the data:

1. A three-way analysis was performed on sample locations #2 and #5 since these locations were collected in replicate for interaction between period and location.

2. A two-way analysis was performed on the remaining locations. The two remote stations were classified as control stations and represented background salt deposition rates. Analysis results were reported in our Annual Environmental Operating Report.

An evaluation of the data for influence by period determined that the deposition rate for most salts varied significantly by quarter. Analysis for interaction showed that there is interaction between sample period and location. Evaluations performed for influence by location showed that sample location did not have a significant influence on deposition rates for some salts while other salts appear to be significantly influenced by location. These variations made it difficult to directly compare preoperational plant conditions against operational plant conditions. Also, the initial set of conditions for ANOVA analysis did not provide a direct comparison of onsite sample stations against offsite sample stations (control stations). To alleviate these problems an additional two-way ANOVA analysis was performed on all salts for the years 1987 and 1988. This analysis was performed to determine if there was any statistical difference between the mean of the onsite samples and the mean of the offsite (control) samples. In evaluating the data for influence between onsite and offsite, it was determined that there was no statistical difference between the mean of the data collected onsite and the mean of the data collected offsite (control stations).

Based on the above, Entergy Operations - GGNS has concluded that the operation of the GGNS cooling tower does not have a statistically significant effect upon the salt deposition rate for those chemical species evaluated and further believes that the requirements of Section 4.2.2 of the EPP have been met. This change will produce no significant environmental impact.

D. NO SIGNIFICANT HAZARDS CONSIDERATION

1. Entergy Operations, Inc. is proposing that Section 4.2.2 of the Environmental Protection Plan (EPP) be revised to reflect the termination of the Cooling Tower Drift Program. Based on the data collected, Entergy Operations has determined that cooling tower drift has no statistically significant effect on the salt deposition rate. Therefore, the purpose of the Cooling Tower Drift Program has been fulfilled.

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 if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or 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. Grand Gulf Nuclear Station (GGNS) has evaluated the no significant hazards considerations in its request for a license amendment. In accordance with 10CFR50.91(a), GGNS is providing the following 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.

      The intent of the Cooling Tower Drift Program is to measure the deposition of drift containing dissolved minerals from the cooling tower to determine the effect on the ecosystem. The deposition was measured prior to plant startup and monitored during at least three years of operation in accordance with the requirements of the EPP. Operational monitoring observations and prestartup reference monitoring observations were compared. No statistically significant difference in the amounts of the analyzed components were detected. Additionally, the program does not affect the performance, integrity or reliability of any system in any way that could lead to an accident.

      Thus, the probability or consequences of previously analyzed accidents are not increased.

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

      The termination of the Cooling Tower Drift Program has been anticipated. The EPP states that the program "will be continued for three years of operation" and "if no statistically significant amounts of the analyzed components are detected during this time period, then a proposal can be made to NRC to terminate the program." The scope of the change is limited to termination of the program as described in the EPP. There are no new or different surveillance tests or actions implemented by the revision. There is no addition, deletion, or modification to any system or component.

      Therefore, the proposed change does not create the possibility of a new or different kind of accident from those previously analyzed.

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

      The termination of the Cooling Tower Drift Program has previously been anticipated in the EPP. The required three years of operation with the program in place has been exceeded. No assumption, methods, or results of applicable safety analyses are changed.

The additional deposition of minerals into the ecosystem has been shown to be statistically insignificant when compared to preexisting levels.

These changes thus do not involve a significant reduction in the margin of safety.

4. Based on the above evaluation, Entergy Operations has concluded that operation in accordance with the proposed amendment involves no significant hazards considerations.