May 18, 1992

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. 96 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1 (TAC NO. M82748)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 96 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Environmental Protection Plan (EPP) in response to your application dated February 7, 1992.

The amendment requests the termination of the Cooling Tower Drift Program and changes references to the program to reflect the program's termination.

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/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 96 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

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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. 96
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 February 7, 1992, 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 Environmental Protection Plan, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) 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. 96 , are hereby incorporated into this license. Entergy Operations, Inc. 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

John T. Larkins

John T. Larkins, Director
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the
Environmental Protection Plan
(Appendix B)

Date of Issuance: May 18, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 96

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix B Environmental Protection Plan with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES
2-1	2-1
4-2	4-2
4-3	---

2.0 ENVIRONMENTAL PROTECTION ISSUES

In the FES-OL dated September 1981, the staff considered the environmental impacts associated with the operation of the Grand Gulf Nuclear Station. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

No aquatic issues were identified in the FES-OL. Effluent limitations and monitoring requirements are contained in the effective NPDES permit issued by the Mississippi Department of Natural Resources. The NRC will rely on this agency for regulation of these matters as they involve water quality and aquatic biota.

2.2 Terrestrial Issues

(1) Potential erosion along transmission line corridors during and immediately following their construction.

(2) Potential impact of cooling tower drift on vegetation surrounding the sites. In the FES the staff recommended an aerial remote sensing program. The applicant opted to do a more detailed surveillance program.

NRC requirements with regard to the terrestrial issues are specified in Subsection 4.2 of this EPP.

by the aerial surveys, and walking patrols will be directed to the problem areas to evaluate the extent of the problem to be corrected.

The Erosion Control Inspection Program shall begin upon commencement of normal transmission line inspection procedures. Semi-annual surveys shall continue until stabilization of soil and vegetation (i.e., ground cover establishment) is achieved.

A summary of the field inspection program and any procedures implemented to control abnormal erosion conditions associated with transmission line maintenance activities shall be reported in the Annual Environmental Operation Report in accordance with Subsection 5.4.1. Field logs indicating locations of erosion damage and measures taken to rectify erosion problem areas and estimation of the time to achieve effective stabilization will be maintained and available for inspection for a period of five years. Results reported shall contain information encompassing but not limited to inspection date, estimated size of erosion problem area, probable cause of erosion, type of stabilization program, and date of effective stabilization, as appropriate.

4.2.2 Cooling Tower Drift Program

Seven sampling sites were utilized to measure cooling tower drift-deposition. At least two of the sampling sites had duplicate sampling devices. Six of the seven sites were located in areas where maximum salt deposition was predicted. These areas were extrapolated from the Bechtel Salt Deposition Model developed for the GGNS Final Environmental Report. The seventh sampling site was a control site located south of Raymond, Mississippi. An eighth offsite control site was added in 1985 in Port Gibson, Mississippi.

Fallout samples were collected on a quarterly basis and analyzed for ten specific constituents. The details of the sampling procedure and chemical

analysis were submitted to the NRC's Environmental Engineering Branch for review and approval prior to plant operation above 5% power. An evaluation of the results of the Cooling Tower Drift Program indicated that the operation of the GGNS cooling tower produced no statistically significant effect upon the salt deposition rate for those chemical species evaluated. The cooling tower drift program was therefore terminated.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 96 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 February 7, 1992, the licensee (Entergy Operations, Inc.) submitted a request for changes to the Grand Gulf Nuclear Station, Unit 1 (GGNS) Environmental Protection Plan (EPP). The requested changes would terminate the Cooling Tower Drift Program of the EPP and alter references to the program to reflect the termination.

2.0 EVALUATION

The purpose of the Cooling Tower Drift Program is to determine if the cooling tower drift, resulting from operation of the facility, is elevating salt deposition rates in the vicinity of GGNS. Elevated salt deposition rates could adversely affect agricultural production. Section 4.2.2 of the EPP states that 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 3 years of operation. If no statistically significant amounts of analyzed components are identified during this period, the NRC would then consider terminating the program. The program was initiated in 1982.

The licensee's February 19, 1991, submittal included an attachment that summarized the results of the drift studies conducted since 1982. Additionally, the 1989 Annual Environmental Operating Report for GGNS, which addressed the Cooling Tower Drift Program results for 1989, was reviewed. On June 5, 1991, NRR staff visited the site to discuss the results of the study and visit the drift sampling stations.

The original study was designed to compare pre-operational to post-operational drift samples. Six sample sites were identified from the Bechtel Salt Deposition Model, which was developed for GGNS during licensing of the facility. Sampling began in 1982. Two additional sites, located offsite, were established: 1 at the time the original 6 were identified and 1 in 1985. These two sampling locations served as control stations.

Comparison of pre-operational to post-operational data was difficult because of the long start-up period for GGNS (almost 3 years from the time the facility achieved initial criticality until it reached 100% power) and the replacement of the cooling tower drift media in 1987. Replacement of the cooling tower drift media altered the amount of drift. During 1987 and 1988, the plant was at full power, and the tower had the new plastic fill media.

The results of the analysis of variance (ANOVA) comparison of the data over time found 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. The three-way ANOVA was performed only on two sample locations since these were the only locations where replicate samples were collected that allowed for a comparison of interaction between period and location. The variations observed over time and among the drift constituents made it difficult to directly compare pre-operational to post-operational data. The results of the analysis were inconclusive.

The licensee also performed a two-way ANOVA on all salts for all stations for 1987 and 1988. This analysis was performed to determine if there was any statistical difference between the mean of the samples from stations located onsite (experimental) and the mean of the samples from the offsite (control) locations. The results of the ANOVA found no statistical differences (95% confidence level) between the mean of the data collected onsite and the mean of the data collected offsite (control stations).

The staff finds that comparing site stations to offsite control stations is an acceptable method of evaluating the effect of GGNS on salt deposition rates in the vicinity of the station. The ANOVA comparing the salt deposition data from the site stations to that from the offsite control stations did not result in a statistically significant difference between the site and offsite stations. The staff agrees with the licensee that the operation of the GGNS cooling tower does not have a statistically significant effect on the salt deposition rate for the chemical species evaluated. Therefore, the staff finds that the intent of the requirement of Section 4.2.2 of the EPP has been met and the Cooling Tower Drift Program required by Section 4.2.2 can be terminated.

The staff's conclusion is supported by a recent unpublished staff review evaluating impacts associated with license renewal. The staff concluded that cooling tower drift at nuclear plants does not appear to be a threat to

agricultural crops or lands or other cultivated crops. No yield reductions from cooling-tower operation have been reported for crops except in situations where crops were experimentally placed close to cooling towers. In addition, no state agency has reported negative impact on agriculture from cooling tower operations.

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

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on May 18, 1992 (57 FR 21138).

Accordingly, based upon the environmental assessment, the Commission has determined that issuance of this amendment will not have a significant effect on the quality of the human environment.

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 Contributor: M. Masnik

Date: May 18, 1992