UNITED STATES NUCLEAR REGULATORY COMMISSION

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-29, issued to Entergy Operations, Inc. (the licensee), for operation of the Grand Gulf Nuclear Station, Unit 1, located in Claiborne County, Mississippi.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed amendment would increase the fuel enrichment and core average burnup relating to extended fuel irradiation.

The proposed action is in accordance with the licensee's application for amendment in support of Cycle 5 reload operations dated June 8, 1990, and the criticality analysis for the Cycle 5 reload fuel submitted on April 26, 1990.

The Need for the Proposed Action

The proposed changes are needed to allow the licensee the flexibility of extending the fuel irradiation, thereby permitting operation for longer fuel cycles.

Environmental Impacts of the Proposed Action

The Commission has completed its evaluation of the proposed changes to the Technical Specifications (TS) for Fuel Cycle 5. The proposed revisions would permit use of fuel enrichments up to 3.80 percent U-235 and burnup

levels up to 40 gigawatt days per metric ton (GWD/MT). The previous maximum fuel enrichment was 3.47 percent and burnup was 34 GWD/MT. The safety considerations associated with reactor operation with slightly higher enrichment and slightly extended fuel irradiation have been evaluated by the NRC staff. The staff has concluded that such changes would not adversely affect plant safety. The proposed changes have no adverse effect on the probability of any accident. The increased burnup may slightly change the mix of fission products that might be released in the event of a serious accident, but such small changes would not significantly affect the consequences of serious accidents. No changes are being made in the types or amounts of any radiological effluents that may be released offsite and there is no significant increase in allowable individual or cumulative occupational radiation exposure. Therefore, the Commission concludes that this proposed action would result in no significant radiological impact.

With regard to potential nonradiological impacts of reactor operation with extended irradiation, the proposed changes to the TS involve systems located within the restricted area as defined in 10 CFR Part 20. The proposed changes will not result in a measurable change to the nonradiological plant effluents and therefore will not have any other environmental impact. The Commission concludes that there are no significant nonradiological impacts associated with the proposed amendment.

The environmental impacts of transportation resulting from the use of higher enrichment fuel and extended irradiation are discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation,"

which was published in the Federal Register on August 11, 1988 (53 FR 30355). This action was in connection with the Shearon Harris Nuclear Power Plant, Unit 1, Environmental Assessment and Finding of No Significant Impact. As indicated therein, the environmental cost contribution of transportation of the increases in the fuel enrichment up to 5% and irradiation limits up to 60 GWD/MT are either unchanged or may, in fact, be reduced from those summarized in Table S-4, as set forth in 10 CFR 51.52(c). Those findings are applicable to the proposed amendment for Grand Gulf Nuclear Station, Unit 1. For Grand Gulf Nuclear Station, Unit 1, the core thermal power level at which the plant is licensed to operate, 3830 megawatts, exceeds the 3800 megawatts assumed in the analysis of 10 CFR 50.52. The only change in environmental impact from that summarized in Table S-4 for this higher power is an insignificant increase (less than one percent) in the heat per irradiated fuel cask in transit.

Therefore, the Commission concludes that there are no significant radiological or nonradiological environmental impacts associated with the proposed changes.

The Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on July 25, 1990 (55 FR 30297). No request for hearing or petition for leave to intervene was filed following this notice.

Alternative to the Proposed Action

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any alternatives with equal or greater environmental impacts need not be evaluated. The principal alternative

would be to deny the requested amendment. This would not reduce environmental impacts of plant operation and would result in reduced operational flexibility.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Final Environmental Statements related to the operation of Grand Gulf Nuclear Station, Units 1 and 2, dated September 1981.

Agencies and Persons Consulted

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For further information with respect to this action, see the licensee's submittals dated April 26, 1990, and June 8, 1990, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C. 20555 and at the Hinds Junior College, McLendon Library, Raymond, Mississippi 39154.

Dated at Rockville, Maryland, this 27th day of September 1990.

FOR THE NUCLEAR REGULATORY COMMISSION

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