

December 20, 1991

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Docket Nos. 50-348  
and 50-364

Mr. W. G. Hairston, III  
Senior Vice President  
Alabama Power Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT -  
INCREASE IN RELOAD FUEL ENRICHMENT - JOSEPH M. FARLEY  
NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. M80893 AND M80894)

Enclosed is a copy of an "Environmental Assessment and Finding of No  
Significant Impact" for your information. This environmental assessment  
relates to your application dated July 1, 1991, as supplemented October 18,  
1991.

This environmental assessment is being forwarded to the Office of the Federal  
Register for publication.

Sincerely,

Original signed by:

Stephen T. Hoffman, Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc: See next page

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Farley Plant

cc: Plant Service list

UNITED STATES NUCLEAR REGULATORY COMMISSION  
ALABAMA POWER COMPANY  
JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2  
DOCKET NOS. 50-348 AND 50-364  
ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating Licenses Nos. NPF-2 and NPF-8 issued to Alabama Power Company (the licensee) for operation of Joseph M. Farley Nuclear Plant, Units 1 and 2 (FNP), located in Houston County, Alabama.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed amendments would include provisions in Technical Specifications (TS) 5.3, Reactor Core, which allow for an increase in reload fuel enrichment from 4.3 weight percent U-235 to a nominal 5 weight percent U-235, and a change in reactor core fuel type to include Westinghouse Optimized Fuel Assemblies (OFA) and VANTAGE-5 fuel assemblies, in addition to the currently authorized Westinghouse Low Parasitic (LOPAR) fuel. In addition, TS 5.6, Fuel Storage, is revised to allow for storage of Westinghouse OFA and VANTAGE-5 fuel assemblies.

The proposed action is in accordance with the licensee's application for amendment dated July 1, 1991, as supplemented October 18, 1991.

The Need for the Proposed Action:

The proposed changes are needed so that the licensee can use higher fuel enrichment to provide the flexibility of extending the fuel irradiation and to permit operation for longer fuel cycles.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed revisions to the TS. The proposed revisions would permit use of fuel enriched to a nominal 5.0 weight percent Uranium 235. The safety considerations associated with reactor operation with higher enrichment and extended 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 higher enrichment, with fuel burnup to 60,000 megawatt days per metric ton Uranium, 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. There is no significant increase in the allowable individual or cumulative occupational radiation exposure.

With regard to potential nonradiological impacts of reactor operation with higher enrichment and extended irradiation, the proposed changes to the TS involve systems located within the restricted area, as defined in 10 CFR Part 20. They do not affect nonradiological plant effluents and have no other environmental impact.

The environmental impacts of transportation resulting from the use of higher enrichment fuel and extended irradiation were published and discussed

in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation," dated July 7, 1988, and published in the Federal Register (53 FR 30355) on August 11, 1988. As indicated therein, the environmental cost contribution of the proposed increase in the fuel enrichment and irradiation limits 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).

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

#### Alternative to the Proposed Action

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

The principal alternative would be to deny the requested amendments. This would not reduce the environmental impact of plant operations 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 Statement related to operation of the Joseph M. Farley Nuclear Plant, Units 1 and 2.

#### 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 amendments.

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 details with respect to this action, see the application for amendments dated July 1, 1991, as supplemented by letter dated October 18, 1991, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, N. W., Washington, D. C. and at the Houston-Love Memorial Library, 212 W. Burdeshaw Street, P.O. Box 1369, Dothan, Alabama 36302.

Dated at Rockville, Maryland, this 20th day of December 1991.

FOR THE NUCLEAR REGULATORY COMMISSION



Elinor G. Adensam, Director  
Project Directorate II-1  
Division of Reactor Projects I/II  
Office of Nuclear Reactor Regulation