Alabama Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868-5086

J. D. Woodard
Vice President-Nuclear
Farley Project

Alabama Power
the southern electric system

July 15, 1991

10 CFR 50.90

Docket Nos. 50-348
50-364

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

JOSEPH M. FARLEY NUCLEAR PLANT
VANTAGE-5 FUEL DESIGN AMENDMENT

Gentlemen:

In order to implement a long-term fuel management strategy for the Joseph M. Farley Nuclear Plant (FNP) Units 1 and 2, Alabama Power Company has decided to use VANTAGE-5 fuel assemblies in future reloads.

In accordance with the provisions of 10 CFR 50.90, Alabama Power Company proposes to amend the Technical Specifications for FNP Unit 1 and Unit 2. The Technical Specifications for which this change is requested allow the use of reload fuel assemblies of the Westinghouse VANTAGE-5 design. Currently, FNP Units 1 and 2 utilize the Westinghouse low parasitic (LOPAR) fuel design for core reloads. The VANTAGE-5 fuel-related technical specification changes are summarized in Attachment 1, and the changes are provided in Attachment 2.

The Westinghouse VANTAGE-5 fuel design provides the operating characteristics (by inclusion of specific design features and by use of improved methodologies previously approved by the NRC) required to implement Alabama Power Company's long-term fuel management strategy. The VANTAGE-5 fuel design features include smaller diameter fuel rods, mid-span zircaloy grids, the intermediate flow mixer grids, natural uranium oxide axial blankets, integral fuel burnable absorbers, assemblies modified for extended fuel burnup, and reconstitutable top nozzles. The reconstitutable top nozzles and fuel assemblies modified for extended fuel burnup are currently utilized in the LOPAR fuel in both FNP Units 1 and 2. In addition, both the FNP Units 1 and 2 LOPAR fuel assemblies are currently operating with the modified debris filter bottom nozzles, which will also be included in the VANTAGE-5 fuel. The new computer code methodologies relative to the current FNP safety analyses used in the FNP VANTAGE-5 safety analyses include NOTRUMP (small-break LOCA) and the improved

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THINC-IV (thermal-hydraulic) computer codes, as well as the Revised Thermal Design Procedure and WRB-1 and WRB-2 DNB correlations. Both the fuel design features and methodologies support the safe, efficient fuel management plan for FNP Units 1 and 2. The margin provided by the VANTAGE-5 fuel design and use of improved methodologies was used to support revised core design parameters that will provide increased design flexibility and meet the Alabama Power Company core design fuel management strategy.

In conjunction with the proposed changes for VANTAGE-5 fuel, Alabama Power Company is requesting additional technical specification changes to support removing and replacing the existing Unit 2 Resistance Temperature Detector (RTD) bypass manifold system with fast response RTDs located in the reactor coolant hot leg and cold leg piping. This change has previously been reviewed and approved by the NRC for Unit 1.

Justification for the above changes is included in the Attachments. Attachment 1 provides a brief description of the proposed changes and the bases for the changes. Attachment 2 provides marked-up and typed Technical Specifications change pages for both Units 1 and 2. Attachment 3 provides the basis for a determination that the proposed changes do not involve significant hazards considerations. Attachment 4 provides a safety assessment which includes details of the safety evaluations/analyses performed to support the transition to a full core of VANTAGE-5 fuel for both FNP Units 1 and 2. Attachment 4 also includes Appendices A, B, and C which contain the detailed supporting non-LOCA and LOCA analyses/evaluations and radiological assessment performed for the VANTAGE-5 fuel design.

The technical justification for the instrument uncertainties for the Revised Thermal Design Procedure with RTD bypass loops is provided in Attachment 5 as WCAP-12769 (Westinghouse proprietary class 2) and WCAP-12770 (Westinghouse proprietary class 3). The technical justification for the instrument uncertainties for the Revised Thermal Design Procedure with RTD bypass loops eliminated is provided in Attachment 6 as WCAP-12771 (Westinghouse proprietary class 2) and WCAP-12772 (Westinghouse proprietary class 3). Affected setpoints, allowable values, and limits were determined using the bounding set of operating parameters and instrument uncertainties associated with either RTD bypass loops installed or eliminated.

Also enclosed with Attachments 5 and 6 are Westinghouse authorization letters (CAW-91-162 and CAW-91-163, respectively) and accompanying affidavits, Proprietary Information Notices, and Copyright Notices. WCAP-12769 and WCAP-12771 contain information proprietary to Westinghouse Electric Corporation which is supported by the affidavits signed by Westinghouse, the owner of the information. Each affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.790 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in

accordance with 10 CFR Section 2.790 of the Commission's regulations. Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse affidavits should reference letter CAW-91-163 and should be addressed to R. P. DiPiazza, Manager of Operating Plant Licensing Support, Westinghouse Electric Corporation, P. O. Box 355, Pittsburgh, Pennsylvania, 15230-0355.

Alabama Power Company requests a review of this proposed FNP Units 1 and 2 licensing amendment by January 31, 1992, to support the first reload of VANTAGE-5 fuel scheduled for March 1992. It is requested that the Unit 2 changes become effective during the Cycle 8/9 outage in the spring of 1992 and the Unit 1 changes become effective during the Cycle 11/12 outage in the fall of 1992.

Alabama Power Company has determined that the proposed changes do not involve a significant hazards consideration. In accordance with 10 CFR 50.92, a significant hazards consideration evaluation is provided as Attachment 3.

Alabama Power Company's Plant Operations Review Committee has reviewed the proposed changes, and the Nuclear Operations Review Board will review the changes at a future meeting. A copy of these proposed changes is being sent to Dr. C. E. Fox, the Alabama State Designee, in accordance with 10 CFR 50.91 (b)(1).

If you have any questions, please advise.

Respectfully submitted,

ALABAMA POWER COMPANY

J. D. Woodard

J. D. Woodard

JDW:RAH/qps

Attachments 1,2,3,4,5,6

cc: Mr. S. D. Ebneter
Mr. S. T. Hoffman
Mr. G. F. Maxwell
Dr. C. E. Fox

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 15th DAY OF July 1991

Debra A. Burnett

Notary Public

My Commission Expires: 9-14-94

bc: Mr. R. P. McDonald
Mr. W. G. Hairston, III
Mr. D. N. Morey
Mr. J. E. Garlington
Dr. W. M. Andrews
Mr. K. W. McCracken
Mr. C. D. Nesbitt
Mr. J. W. McGowan
Mr. O. Batum
Mr. W. R. Bayne
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