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Docket No. 50-348

Director, Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. S. A. Varga

JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 1
CYCLE-7 RELOAD

Gentlemen:

Farley Unit-1 is currently in its sixth cycle of operation with a refueling outage scheduled to commence in April 1985. The sixth cycle of operation will be terminated within a cycle burnup range of 11,500 to 13,000 MWD/MTU. This letter is to advise you of Alabama Power Company's review of the Farley Unit-1 Cycle-7 core reload design and plans regarding its implementation.

The Farley Unit-1 Cycle-7 core reload was designed to perform within the current nominal design parameters, Technical Specifications and related bases, and current setpoints. A total of 2 Region-4A, 2 Region-7, 77 Region-8 and 76 fresh Region-9 fuel assemblies will be inserted at the refueling outage. The mechanical, nuclear and thermal-hydraulic design of the Region-9 fuel assemblies is identical to the design of the previous region. The Region-4A assemblies are special test assemblies of a new Westinghouse design that have been previously irradiated in Cycles 2, 3, 4 and 5. The test program associated with these special test assemblies is discussed in the Westinghouse report entitled "Optimized Fuel Assembly Demonstration Program," (WCAP-9286) July 1978. This new design involves several minor design changes, principally the reduction in fuel rod diameter and the incorporation of Zircaloy spacer grids for all but the top and bottom grid locations. The reload core design places these test assemblies into core locations that prevent them from becoming lead assemblies during normal operation or leading to more limiting conditions during transient conditions than analyzed for the standard design fuel assemblies.

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A detailed review of the Westinghouse Reload Safety Evaluation Report (RSER) for Farley Unit-1 Cycle-7, including all postulated events considered in the FSAR and the Westinghouse fuel densification report, WCAP-8219, "Fuel Densification Experimental Results and Model for Reactor Operation" has been completed. The RSER included a review of the Cycle-7 core characteristics to determine that the assumed values of the input parameters affecting the postulated accident analyses reported in the Farley FSAR remained bounding. Events for which previously assumed values of input parameters were not bounding were evaluated or reanalyzed. For all such events the results met NRC acceptance criteria. This verification was performed in accordance with the Westinghouse reload safety evaluation methodology as outlined in the March 1978 Westinghouse topical report entitled, "Westinghouse Reload Safety Evaluation Methodology," (WCAP-9272).

The reload safety evaluation demonstrated that Technical Specification changes are not required for operation of Farley Unit-1 Cycle-7. Alabama Power Company's Plant Operations Review Committee and Nuclear Operations Review Board have concluded that no unreviewed safety questions defined by 10CFR50.59 are involved with this reload. Therefore, based on this review, an application for amendment to the Farley Unit-1 operating license is not required.

Verification of the reload core design will be performed in accordance with the standard startup physics tests normally performed for Westinghouse PWR reload cycles. These tests will include, but not be limited to, measurements of:

(1) Control rod drop time;
(2) Critical boron concentration;
(3) Control rod bank worth;
(4) Moderator temperature coefficient;
(5) Startup power distribution using the incore flux mapping system.

Results of these tests and a core loading map will be submitted approximately ninety (90) days after startup of Cycle-7.

Yours very truly,

R. P. McDonald

RPM/MDR:cl, D-2

cc: Mr. L. B. Long
Dr. J. N. Grace
Mr. E. A. Reeves
Mr. W. H. Bradford
Mr. Dan Turner