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Georgia Power
the southern electric system

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Docket No. 50-424

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1
CYCLE 4 RELOAD

The Vogtle Electric Generating Plant (VEGP) Unit 1 completed its third cycle of operation on September 15, 1991. The third cycle of operation was terminated at a cycle burnup of approximately 18,500 MWD/MTU. This letter is to advise you of Georgia Power Company's review of the VEGP Unit 1 Cycle 4 core reload design and plans regarding its implementation.

The VEGP Unit 1 Cycle 4 core reload was designed to perform within the current design parameters, Technical Specifications and related bases, and current setpoints, all as revised by the VEGP VANTAGE-5 fuel design and resistance temperature detector bypass system removal (Amendments 43 and 45 to Operating License NPF-68, respectively) and ZIRLO™ fuel rod cladding Technical Specification change (Amendment 47). A total of 37 LOPAR Region-4, 48 LOPAR Region-5A, 36 LOPAR Region-5B, 56 fresh VANTAGE-5 Region-6A, and 16 fresh VANTAGE-5 Region-6B fuel assemblies and 3200 Integral Fuel Burnable Absorbers (IFBAs) will be inserted at the refueling outage. The Region-6A and 6B assemblies are the same as that described in the VANTAGE-5 licensing amendment request. The VANTAGE-5 fuel assemblies contain the modified debris filter bottom nozzle. In addition, two of the VANTAGE-5 Region-6B fuel assemblies each contain 12 fuel rods clad with ZIRLO™.

Georgia Power Company has performed a detailed review of the Westinghouse Reload Safety Evaluation (RSE) for VEGP Unit 1 Cycle 4, including all postulated events considered in the FSAR and the VANTAGE-5 fuel design safety analyses. The RSE included a review of the Cycle 4 core characteristics to determine that the key safety parameters affecting the postulated accident analyses reported in the Vogtle FSAR and the VANTAGE-5 safety analyses remained bounding. For all such events, the Cycle 4 reload design met the limits for the key safety parameters and the NRC acceptance criteria. In addition, the core locations of the 24 ZIRLO™ clad fuel rods were selected such that the ZIRLO™ clad fuel rods would be bounded by the FSAR and the VANTAGE-5 safety analyses results and conclusions. This verification was performed in accordance with the Westinghouse reload safety evaluation methodology as outlined in the July 1985 Westinghouse topical report entitled "Westinghouse Reload Safety Evaluation Methodology"

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(WCAP-9272-P-A). The Cycle 4 reload also utilized the Westinghouse "[illegible]ar Shape Sensitivity Model" for the large break LOCA analysis axial cos power distribution verification. This model is currently under NRC [illegible]iew (WCAP-12935, May 1991).

The RSE demonstrates that additional Technical Specification changes other than those already approved by the NRC (VANTAGE-5 fuel, RTD bypass system removal, and ZIRLO™) are not required for operation of VEGP Unit 1 Cycle 4. Georgia Power Company's Plant Review Board has reviewed the RSE and concluded that no unreviewed safety questions as defined by 10 CFR 50.59 are involved with this reload. Therefore, based on this review, an application for amendment to the Vogtle Unit 1 Operating License is not required. The RSE will be reviewed by the Safety Review Board at the next scheduled meeting.

Verification of the reload core design will be performed per 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; and
(5) Startup power distribution using the incore flux mapping system.

Results of these tests and a core loading map will be submitted approximately 90 days after startup of Cycle 4.

Sincerely,

C. K. McCoy

CKM/HWM/gps

xc: Georgia Power Company
Mr. W. B. Shipman
Mr. M. Sheibani
NORMS

U.S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle