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RC-96-0235

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20055

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
LEAD TEST ASSEMBLY PROGRAM PARTICIPATION

South Carolina Electric & Gas Co. (SCE&G) submits the following information to document our participation in the Lead Test Assembly (LTA) program during Cycle 10.

This change was made under the provisions of 10 CFR 50.59, but has not previously been submitted to the Commission. As specified in 10 CFR 50.59(a)(1)(iii), the holder of a license authorizing operation of a production or utilization facility may "conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the Technical Specifications incorporated in the license or an unreviewed safety question." SCE&G has entered into the LTA program with Westinghouse to confirm the use of the ZIRLO alloy to discharge burnup levels exceeding those currently allowed by the NRC.

This letter serves as a written follow-up to document our participation in the LTA Program. VCSNS staff members previously informed the Commission of our intent to participate in this program during Cycle 10. Mel Browne, Manager, Design Engineering, and Bruce Johnson, Nuclear Fuel Management, have met with our NRC Resident Inspector, Brian Bonser, to introduce him to the LTA program. Jim Proper, Supervisor, Nuclear Licensing & Operating Experience, has discussed the LTA program with our NRC Project Manager. Additionally, Westinghouse had two meetings with the Commission in which our LTA program was discussed. These meetings were held in Bethesda, MD on September 28, 1995 and January 16, 1996.

LTA programs are used to obtain early irradiation experience on new product features subjected to normal operating conditions. Westinghouse has established several NRC accepted guidelines associated with LTA programs as follows: (1) the design of the LTAs are mechanically and hydraulically compatible with the existing fuel assemblies, (2) the peaking factors meet the Technical Specification limits, (3) NRC approved/accepted safety/design evaluation methodology and codes, as described in

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WCAP-12488-P-A "Westinghouse Fuel Criteria Evaluation Process," October, 1994, are used, (4) no specific acceptable fuel design limits, as described in WCAP-12488-P-A, are exceeded, (5) not more than eight (8) LTAs per core are to be normally inserted, and (6) the LTAs cannot be the limiting fuel assemblies in the core.

Meeting the above guidelines, a Region 10B fuel assembly, K35, was loaded as an LTA during the Spring 1996 outage for further irradiation during the current cycle. Assembly K35 is a VANTAGE + fuel assembly containing ZIRLO fuel rods, guide tubes, and instrumentation tubes as described in WCAP-12610, "VANTAGE + Fuel Assembly Reference Core Report," June, 1990. This assembly was partially chosen due to its projected burnup at the end of Cycle 9: assembly average burnup of 44859 MWD/MTU with a peak rod burnup of 47016 MWD/MTU. Considering current projections for Cycle 10, this assembly will achieve an assembly average burnup of 62410 MWD/MTU with a peak rod burnup of 64307 MWD/MTU.

The VCSNS Technical Specifications do not address maximum allowable assembly or peak rod burnups. However, the peak rod burnup, during Cycle 10 operation, will exceed the previously allowed burnup of 60000 MWD/MTU as issued to us under the SER for Technical Specification Amendment #105, dated October 22, 1991, for use with the VANTAGE + fuel product. This limit had been set due to a lack of data beyond this range. The LTA program is the industry accepted method for obtaining fuel assembly performance data above established limits.

Modification Request Form (MRF) 90010, containing FSAR Revision Notice No. 95-22, updates the FSAR with the VANTAGE + fuel design. Although no references are made in the FSAR as to limits on maximum assembly or peak fuel rod burnup, the LTA program represents a test or experiment not described in the FSAR and represents a change to the normal plant configuration as described in the FSAR.

The use of K35 as an LTA was documented in the Cycle 10 Reload Core Design MRF (MRF-22764). MRF-22764 embodies the Cycle 10 Reload Safety Evaluation and contains a specific assessment to document the acceptability of assembly K35 as an LTA under 10 CFR 50.59 (a)(1)(iii) criteria. The results of the Westinghouse assessment have demonstrated that:

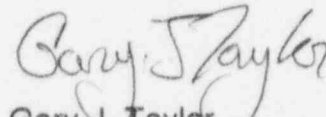
- a. Assembly K35 will remain acceptable for operation from a fuel assembly/fuel rod mechanical standpoint;
- b. Assembly K35 will remain acceptable for operation with respect to reactor internals interfaces, fuel handling equipment and fuel storage racks; and
- c. Assembly K35 was determined to meet all fuel rod design criteria for a lead rod burnup up to 65500 MWD/MTU.

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Based upon the evaluations and analyses documented in MRF-22764, the safety evaluations for this LTA program satisfy the guidelines described in WCAP-12488-P-A and the design criteria of WCAP-12610. Subsequently, the use of K35 as an LTA does not require a Technical Specifications change nor results in any unreviewed safety questions. Assembly K35 is determined to be acceptable for a third cycle of operation to a lead rod burnup of 65500 MWD/MTU and a plant uprated power level of 2900 Mwt.

Should you have any questions concerning this issue, please call Mr. Michael J. Zaccone at (803) 345-4328.

Very truly yours


Gary J. Taylor

GJT/mjz
Enclosure

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