

July 3, 2003

Mr. Stephen A. Byrne  
Senior Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station Post Office Box 88  
Jenkinsville, South Carolina 29065

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING VIRGIL C. SUMMER  
NUCLEAR STATION STEAM GENERATOR INSPECTION (TAC NO. MB7312 )

Dear Mr. Byrne:

By letter dated January 14, 2003, South Carolina Electric & Gas Company, the licensee for Virgil C. Summer Nuclear Station, submitted a License Amendment Request (LAR) for a one-time extension of steam generator inspection frequency. The proposed change to Technical Specification 4.4.5.3.a would revise the maximum inspection interval from 40 to 58 months after two consecutive inspections that were classified as C-1.

The Nuclear Regulatory Commission staff has reviewed the amendment request and determined that it did not provide sufficient information to approve the LAR for a one time extension of steam generator inspection frequency. The enclosed request for additional information contains specific questions related to these issues. I have discussed this request with Mr. Melvin Browne, Licensing Manager, Virgil C. Summer Nuclear Station, and he agreed to respond to this request by July 16, 2003. Please contact me if you have any questions.

Sincerely,

*/RA/*

Karen R. Cotton, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosure: As stated

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

VIRGIL C. SUMMER NUCLEAR STATION

LICENSE AMENDMENT REQUEST

STEAM GENERATOR INSPECTION FREQUENCY

By letter dated January 14, 2003, South Carolina Electric & Gas Company, the licensee for Virgil C. Summer Nuclear Station, submitted a License Amendment Request (LAR) for a one-time extension of the steam generator tube inspection frequency requirements in their Technical Specifications (TSs). The proposed one-time change to TS 4.4.5.3.a revises the maximum inspection interval from 40 to 58 months after two consecutive inspections which were classified as C-1. The Nuclear Regulatory Commission (NRC) staff requests that the licensee respond to the following questions to permit the NRC staff to complete its review of the request for a one time inspection frequency extension.

1. The LAR proposes the following modification for Section 4.4.5.3.a, "A one time inspection interval of once per 58 months is allowed for the inspection performed immediately following refueling outage RF-12." Since RF-12 is not defined in the TSs, the NRC staff concludes that this statement must be clarified. This may be done by either specifying the end date of RF-12 in the TS or specifying the end date of the 58-month inspection interval.
2. In your submittal documenting past inspection results you reference various support structures (e.g., AV7) and various tube locations (e.g., R25C26). In order to ascertain the locations of these indications, please provide a schematic of the Model Delta 75 steam generator identifying the nomenclature of the tube supports. In addition, provide a tubesheet map identifying the rows and columns of the tubes.
3. During RF-12, as reported in Virgil C. Summer Special Report SPR-2000-005 dated November 8, 2000, five tubes with no tube expansion (NTE) were plugged. Presumably these tubes were never expanded prior to service. Have all tubes that have not been fully expanded in the tubesheet been removed from service? If not, discuss the potential for degradation to occur in this region until the next inspection is performed and provide the technical basis for removing some, but not all, of the NTE tubes from service during RF-12.
4. The licensee states the potential for loose parts entering the steam generator is minimized by the design of the feedwater ring spray nozzle assemblies, which consist of 0.25-inch diameter outlet holes. The LAR also mentions that if parts are small enough to pass through the feedwater spray nozzle outlet holes, they will pass between the tubes and be transported to low velocity regions of the bundle. Please state whether any additional loose parts (other than the 0.5-inch long wire) were identified during RF-11. Provide a summary of loose parts identified in the replacement steam generators including the type, number, size, probable origin, and location (prior to removal). Are there any known or suspected loose parts in the steam generators at this time? Are you planning a foreign object search and retrieval inspection during the RF-14 outage in 2003?

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5. Recently another licensee reported several loose parts in their steam generators. Many of the loose parts were from the stainless steel face of Flexitallic™ gaskets used in various locations in the feedwater system. The licensee postulated that these gaskets extrude into the flow path and then break, releasing pieces into the feedwater. Other licensees have also reported pieces of spiral wound gaskets in the steam generator. Indicate whether the Virgil C. Summer secondary side system contains gasket material that has created loose parts in the steam generator and how that would affect tube integrity during the requested extended operating interval between inspections.
6. One of the key steam generator improvements cited by the licensee as supporting extended operation between inspections is the resistance of the thermally treated Alloy 690 to corrosion, stress corrosion cracking (SCC), and other service-related degradation mechanisms. Discuss the probability of corrosion, SCC and other service related degradation during the requested extended operating interval between inspections.
7. Describe what actions, if any, you have taken to verify that Virgil C. Summer steam generator tube processing was provided as specified. (Refer to NRC Information Notice IN-2002-21 dated April 1, 2003.) If tubes with non-optimal tube processing have been identified, discuss the implications for the Virgil C. Summer operational assessment for the 58-month interval between inspections.
8. Has there been any primary-to-secondary system leakage during the current operating cycle? Does Virgil C. Summer follow the Electric Power Research Institute Pressurized-Water Reactor Primary-To-Secondary Leak Guidelines?

Mr. Stephen A. Byrne  
South Carolina Electric & Gas Company

VIRGIL C. SUMMER NUCLEAR STATION

cc:

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