April 28, 2008

Mr. Tom E. Tynan
Vice President - Vogtle
Southern Nuclear Operating Company, Inc.
7821 River Road
Waynesboro, GA 30830

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION, SECTIONS 3.3, 4.3 AND 4.7.1

Dear Mr. Tynan:

By letter dated June 28, 2007, Southern Nuclear Operating Company, Inc., submitted an application pursuant to 10 CFR Part 54, to renew the operating licenses for Vogtle Electric Generating Plant, Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information (RAIs) are based on responses that your staff had supplied to earlier questions and are submitted as a follow up to those earlier RAIs.

Items in the enclosure were discussed with members of your staff during a telephone call on April 14, 2008, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3191 or e-mail Donnie.Ashley@nrc.gov.

Sincerely,

/RA/

Donnie J. Ashley, Sr. Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure:
As stated

cc w/encl: See next page

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ADAMS Accession No.: **ML081080189**

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DATE	4/22/08	04/22/08	04/28/08

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VOGTLE ELECTRIC GENERATING PLANT UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

The staff has compared the information provided by the applicant related to the time limited aging analyses of reactor vessels of the Vogtle Nuclear Plant (Vogtle), Units 1 and 2, and the information provided in the licensee's response to previous RAIs. The staff has determined that some of the information provided requires clarification or additional information.

RAI-4.3-04

In a letter dated February 21, 2008, the applicant submitted its response to RAI 4.3-4, regarding Table 4.3.1-3, Evaluation of Environmental Effects on Fatigue, of the LRA. The applicant provides the analysis results for cumulative usage factor (CUF) values of the charging nozzle and the surge line hot leg nozzle for different transients. Upon review of the response as well as Table 4.3.1-3 of the LRA, the staff identified several areas where additional information is needed for the staff to complete its review. Please note that questions a through i pertain to the letter response.

a. Figure 1 and Figure 2, the temperature transient curves for the charging nozzle, are missing from the response. Please provide them.

b. The locations for the charging nozzle and the surge line hot leg nozzle are at the safe-end region. Confirm the critical fatigue locations are at the safe-end region and provide supporting analysis results.

c. Sections 4.5.4 and 5.5.4 state that "FatiguePro stress output for each transient was used as guidance to split the transient up into sub-transients." In addition, the FatiguePro stress output, Figure 9, shows that 1-D stress versus time was plotted. Explain how this graph was used in determining the stress intensity and explain why this graph was used instead of the temperature transient curve.

d. The maximum range of linearized membrane plus bending stress from FatiguePro is taken as 2/3 times the peak stress range for the charging nozzle. What is the basis for the 2/3 factor? In addition, please explain the basis for using 17/20 factor to calculate maximum range of linearized membrane plus bending stress for surge line.

e. For the charging nozzle, the location of high fatigue usage is protected by the thermal sleeve. Why is the alternating stress so high? Do both analyses use the same peak stress index at that location?

f. The analyses are based on the 1986 Edition of the ASME Code. Does the FatiguePro analysis, which is based on NB-3600, exclude the linear thermal gradient when computing the strain concentration factor, K_e.

g. For the surge line hot leg nozzle, was a temperature variation in the circumferential direction used in the analysis? If so, how was it accounted for in FatiguePro?

ENCLOSURE

h. Section 4.5.1 states nominal stress components due to piping loads are multiplied by 1.8 to yield P+Q+F stress components. Describe the basis for using 1.8 factor in the ASME NB-3200 analysis.

i. The February 21, 2008 response did not address the safety injection nozzle. Indicate whether the safety injection nozzle CUF calculated using FatiguePro would bound the CUF value calculated using the ASME-3200 methodology and provide the basis for the conclusion.

j. Table 4.3.1-3 of the LRA indicates that the RHR line inlet transition nozzle had a design CUF of 0.95. Explain why the Unit 1 and Unit 2 60-year projected CUF is significantly lower than the design CUF.

RAI 4.7.5-1 :

In Southern Nuclear's Letter No. NL-08-0195, dated March 20, 2008 (ADAMS ML080810440), the applicant amended the LRA to provide its TLAA on underclad cracking of those reactor pressure vessel (RPV) components that are made from SA-508, Class 2 low alloy steel forgings with internal stainless steel or nickel alloy cladding. The supplemental LRA Section (LRA Section 4.7.5) states the flaw growth analysis in WCAP-15338 for Westinghouse-designed reactors is bounding for the 4-loop reactors at Vogtle and that this TLAA is acceptable in accordance with the provisions in 10 CFR 54.21(c)(1)(i). In Section 4.1 of the staff's safety evaluation on WCAP-15338, the staff identified two (2) renewal applicant action items on the use of this WCAP for a facility's licensing basis. In the first action item, the staff requested that, for 2-loop and 4-loop Westinghouse PWRs, the renewal applicant should demonstrate that the transients for normal, upset, emergency, faulted, and pressurized thermal shock (PTS) conditions used in WCAP-15338 report bound their plant-specific transients for these conditions; otherwise, the staff requested that the applicant perform similar Section XI flaw evaluations using their plant-specific transients to demonstrate that their Reactor Pressure Vessels (RPV) with underclad cracks are acceptable for 60 years of operation. In the second action item, the staff requested that the applicants referencing the WCAP-15338 report for the RPV components shall ensure that the evaluation of the TLAA is summarily described in the FSAR supplement. The staff has verified that the amendments of the LRA in Letter No. NL-08-0195 provided UFSAR Supplement for this TLAA that satisfies applicant action item No. 2 from the staff's SE on WCAP-15338. However, the staff has determined that the new TLAA section does not address how the transients for normal, upset, emergency, faulted, and PTS conditions used in WCAP-15338 bound their plant-specific transients for these conditions at Vogtle. The staff requests that SNOC provide clarification on how the normal, upset, emergency, faulted, and Pressurized Thermal Shock (PTS) conditions used in WCAP-15338 report bounds the plant-specific transients for these conditions at Vogtle reactor units.

RAI 3.3-1 and 3.4-1:

Regarding the use of AMPs (e.g., the External Surfaces Monitoring Program) that credit visual examinations of external polymer (including elastomers, thermoplastics, thermoset, or rubber materials) surfaces, justify your basis for crediting the AMP for aging management of cracking and changes in material properties of the polymetric materials. Clarify how a visual examination alone is capable of detecting a crack or a change in a specific material property (such as a change in a hardness, strength, elasticity or fracture toughness property) in these type of materials.

Letter to T. Tynan from D. Ashley, dated April 28, 2008

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Vogtle Electric Generating Plant, Units 1
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