December 19, 2007

Mr. Tom E. Tynan
Vice President - Vogtle
Vogtle Electric Generating Plant
7821 River Road
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 - GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED-WATER REACTORS," EXTENSION REQUEST APPROVAL (TAC NOS. MC4727, MC4728)

Dear Mr. Tynan:

The Nuclear Regulatory Commission (NRC) staff has evaluated a request from the Southern Nuclear Operating Company (SNC) for an extension of the Vogtle Electric Generating Plant, Units 1 and 2 (VEGP), sump clogging corrective actions due date of December 31, 2007. The December 31, 2007, date is included in Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors." The NRC staff's evaluation is enclosed.

The NRC staff has determined that for VEGP, it is acceptable to extend the due date for completion of corrective actions for GL 2004-02, as described in the enclosure, until May 31, 2008. The NRC staff's previous approval of SNC's request to modify the VEGP, Unit 1 flow orifices during the Unit 1 refueling outage in the spring of 2008 remains in effect. The staff expects that the corrective actions concerning the Technical Specifications' change regarding the refueling water storage tank minimum level increase and the new switchover setpoint values will be implemented expeditiously following the staff's approval of the associated license amendment request.

Sincerely,

/RA/

Siva P. Lingam, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
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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VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

GSI-191/GL 2004-02 EXTENSION REQUEST

DOCKET NOS. 50-424 AND 50-425

In a letter dated December 7, 2007, (Agencywide Documents Access and Management System (ADAMS), ML No. 073440044), Southern Nuclear Operating Company (SNC) requested an extension to the corrective action due date of December 31, 2007, stated in NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors," for the Vogtle Electric Generating Plant (VEGP), Units 1 and 2. By letter dated June 22, 2006 (ADAMS ML No. 061730462), SNC had previously requested that installation of certain Unit 1 new flow orifices be extended until the completion of the Unit 1 spring 2008 refueling outage, scheduled to begin on March 2008. By letter dated September 7, 2006, (ADAMS ML No. 062500269), the NRC determined that it was acceptable to extend the installation date for the flow orifices on Unit 1 until the completion of the Unit 1 spring 2008 refueling outage.

SNC stated that it has taken actions, as described in SNC's letters dated June 22, 2006, and July 28, 2006, (ADAMS ML No. 062120593), toward accomplishing the corrective actions described in GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the Unit 1, fall 2006, refueling outage and the Unit 2, spring 2007, refueling outage. SNC is continuing the evaluation of the adequacy of the replacement strainers for VEGP Units 1 and 2.

However, despite the installation of the new sump screens and downstream effects modifications, the licensee stated the VEGP passive strainer design still has open industry and plant-specific design issues to be resolved. The projected outstanding items for each unit are:

1. Completion of the downstream effects evaluations in accordance with WCAP-16406-P, Rev. 1, "Evaluation of Downstream Sump Debris Effects in Support of GSI-191," and WCAP-16793-NP, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid."

2. Completion of chemical effects testing and evaluation of test results.

3. Determination of whether hardware and/or procedural modifications are needed as a result of the downstream effects evaluations and chemical effects testing/evaluation, and modification implementation schedule, if required.

4. Development of a license amendment request and receipt of NRC approval of new Technical Specification (TS) values for the refueling water storage tank (RWST) minimum volume and semi-automatic switchover values.

In addition, during the review of industry operating experience with respect to GSI-191 containment sump designs and supporting analyses, SNC identified certain nonconservatisms that were not accounted for in the analyses, and nonconservatisms in the design input from SNC to the vendor designing the sump screens. The net effect of these nonconservatisms was that the new residual heat removal (RHR) sump strainers would potentially not be fully submerged in the worst-case scenario at the initiation of cold-leg recirculation. The containment spray sump strainers are not affected by this condition as they are not as tall as the RHR sump strainers. In order to ensure that the new RHR sump strainers are indeed submerged, SNC has identified the need for two changes to the VEGP TS:

1. Increase the minimum RWST inventory required by surveillance requirement (SR) 3.5.4.2.

2. Decrease the Nominal Trip Setpoint LCO 3.3.2, Table 3.3.2-1, Functional Unit 7b, Semi-Automatic Switchover to Containment Sump, RWST Level Low. The associated allowable value would be decreased commensurately.

The criteria for granting an extension to the due date of December 31, 2007, for completion of GL 2004-02 corrective actions are stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and

- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling systems (ECCS) and containment spray system (CSS) functions during the extension period.

With regard to the first extension criterion, SNC has a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions and modifications. Specifically, the licensee has stated that it has completed the following actions:

1. Installation of the new sump strainers on Units 1 and 2 for each of the RHR screens, and each of the containment spray screens.

2. Removal of Min-K insulation from containment which, according to plant-specific head loss testing (not considering chemical effects), resulted in a significant reduction in head loss across a loaded screen.

3. Completion of modifications to mitigate downstream effects on Unit 2 during the spring 2007 outage.

The licensee stated that the following actions are in progress or planned:

1. Completion of chemical effects head loss testing and evaluation of the results.

2. Reevaluation of downstream effects to incorporate WCAP-16406-P, Rev 1.

3. Preparation of the associated license amendment requests.

4. Installation of the new Unit 1 ECCS flow orifices during the spring 2008 outage. (Note: An extension request for this activity was previously approved by the NRC in a letter dated September 7, 2006.)

5. Implementation of the RWST minimum inventory increase following NRC approval of the associated license amendment.

6. Implementation of the new RWST semi-automatic switchover setpoint values following NRC approval of the associated license amendment.

With regard to the second extension criterion, the licensee has stated that the following modifications, mitigative measures, compensatory measures, and/or favorable conditions are in effect at VEGP Units 1 and 2, minimizing the risk of degraded ECCS and CSS functions during the extension period:

1. Installation of the new sump strainers on Units 1 and 2.

2. Implementation of procedural guidance regarding containment foreign material exclusion controls.

3. Bulletin 2003-01 training and procedural guidance to expedite plant cooldown in response to a small-break loss-of-coolant accident (LOCA) were incorporated into plant emergency response procedures.

4. Removal from containment of Min-K insulation.

5. The net positive suction head (NPSH) analyses for the containment spray pumps and the RHR pumps do not credit containment overpressure, although it would be expected to occur during a large-break LOCA.

The licensee also noted several other favorable factors that are applicable to VEGP Units 1 and 2, including a compartmentalized containment that makes transport of debris difficult, a delay of 20 minutes after a large-break LOCA before recirculation begins (which would allow some debris to settle to the containment floor and not reach the strainer), the low probability of the large-break LOCA, and the existence of safety-related containment coolers which can supplement containment heat removal capability if spray flow is degraded.

The NRC believes that SNC has a reasonable plan for VEGP Units 1 and 2 that should result in the installation of final GSI-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that SNC has put mitigation measures in place at VEGP Units 1 and 2 to adequately reduce risk for the requested extension period of approximately 4 months.

The licensee's letter requested an extension of the due date for completion of remaining corrective actions for GL 2004-02 to June 30, 2008. However, given the high priority placed on resolution of sump performance issues, the NRC staff believes a due date of May 31, 2008, is achievable and appropriate for VEGP. During a phone conference on December 11, 2007, the licensee agreed with this date.

Based on the licensee having satisfactorily addressed the applicable NRC criteria as discussed above, it is acceptable to extend the completion date for certain corrective actions for the issues discussed in GL 2004-02 (specifically, the modifications, analyses, and document changes listed above) until May 31, 2008, for VEGP Units 1 and 2. While the NRC accepts this date as reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects VEGP to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible. In addition, the NRC expects that the

actions dependent on approval of a license amendment will be implemented expeditiously after receipt of the amendment.

Approval of the extension to the GL 2004-02 corrective action due date shall not be construed as approval of any operating license amendment described in the licensee's extension request.

Vogtle Electric Generating Plant, Units 1 & 2

cc:

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