August 2, 2012

MEMORANDUM TO: Biweekly Notice Coordinator

FROM: Ravindra Joshi, Project Manager ***/RA/***
Licensing Branch 4 (LB4)
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: REQUEST FOR PUBLICATION IN BIWEEKLY FR NOTICE - NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES AND COMBINED LICENSES, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING (TAC NO. RP9411)

Southern Nuclear Operating Company, Inc. Docket Nos. 52-025 and 52-026, Vogtle Electric

Generating Plant (VEGP) Units 3 and 4, Burke County, Georgia

Date of amendment request: August 1, 2012

Description of amendment request: The proposed changes would amend Combined License Nos. NPF-91 and NPF-92 for VEGP Units 3 and 4, respectively, in regard to the concrete and reinforcement details specified compressive strength for the nuclear island basemat. The basemat is the common 6-foot-thick, cast-in-place, and reinforced concrete foundation for the nuclear island structures, consisting of the containment, shield building, and auxiliary building. The departure from the Tier 2* information involves changing the concrete specified compressive strength from 4000 psi to 5000 psi for the basemat in the Updated Final Safety Analysis Report (UFSAR) Subsection 3.8.4.6.1.1 and removing the 0″ dimension from the Lower-Section detail that represents the basemat below the exterior wall in UFSAR Figure 3H.5-3.

Basis for proposed no significant hazards consideration determination: As required by

10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards

consideration, which is presented below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The design function of the basemat is to provide the interface between the nuclear island structures and the supporting soil. The basemat transfers the load of nuclear island structures to the supporting soil. The basemat transmits seismic motions from the supporting soil to the nuclear island.

   The change to the concrete/rebar details for the basemat does not have an adverse impact on the response of the basemat and nuclear island structures to safe shutdown earthquake ground motions or loads due to anticipated transients or postulated accident conditions because there is not an adverse change to the seismic floor response spectra and transient and postulated accidents are not affected by seismic motions. The change to the concrete/rebar details for the basemat does not impact the support, design, or operation of mechanical and fluid systems because [the] change in the loads on these systems due to seismic motions is negligible. There is no change to the design of plant systems or the response of systems to anticipated transients and postulated accident conditions. The basemat supports the structures and the mechanical system and component supports. There is no change to this function. Because the change to the concrete/rebar details does not change the response of systems to postulated accident conditions and is unrelated to any accident source term parameters, there is no change to the predicted radioactive releases due to postulated accident conditions. Therefore, there is no change to the consequences of an accident before or after implementation of the proposed amendment. The plant response to previously evaluated accidents or external events is not adversely affected, nor does the change described create any new accident precursors. Therefore, there is no difference between the probability of a seismically induced event before or after the implementation of the proposed amendment. The concrete specified compressive strength and 0″ dimension are not parameters considered as an initiator for any accident previously evaluated. Therefore, there is no difference in the probability or consequences of a seismically induced event before or after implementation of the proposed amendment. Based on the considerations outlined above, there is no significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change is an increase in the concrete specified compressive strength for the basemat and a change in the reinforcement details. The change to the concrete/rebar details does not change the design function of the basemat or nuclear island structures. The change to the concrete/rebar details does not change the design function, support, design, or operation of mechanical and fluid systems. Because the basemat will be designed to the American Concrete Institute (ACI) Codes specified in the UFSAR and the concrete will be specified,

mixed, batched and placed to the same codes and standards specified in the UFSAR, the change to the concrete/rebar details does not result in a new failure mechanism for the basemat or new accident precursors. As a result, the design function of the basemat is not adversely affected by the proposed change. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

   Response: No

   The margin of safety for the design of the seismic Category I structures including the basemat is determined by the use of the ACI 349 code and the analyses of the structures required by the UFSAR. The change to the concrete/rebar details does not have an adverse impact on the strength of the basemat. The change to the concrete/rebar details does not have an adverse impact on the seismic design spectra or the structural analysis of the basemat or other nuclear island structures. The change to the concrete/rebar details does not significantly impact the analysis requirements or results for the nuclear island for bearing, settlement, construction sequence, sliding, or overturning, because there is no change in the analysis assumptions for density, weight, friction, or seismic motions due to the increase in the concrete specified compressive strength. There is no increase in the portions of the basemat subject to predicted lift-off (zero contact force) during seismic motions analyzed for the safe shutdown earthquake. There is minimal change to soil pressures on the basemat due to the change in stiffness of the basemat. As a result, the design function of the basemat is not adversely affected by the proposed change. Therefore, the proposed change will not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Attorney for licensee: Mr. M. Stanford Blanton, Balch & Bingham LLP, 1710 Sixth Avenue North, Birmingham, AL 35203-2015.

NRC Branch Chief: Mark E. Tonacci

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