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SOUTHERN COMPANY

July 3, 2012

Docket No.: 52-025

ND-12-1393

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
Basemat Reinforcement Design Fully Meets the UFSAR

Ladies and Gentlemen:

By letter ND-12-1139 dated June 18, 2012, Southern Nuclear Operating Company (SNC) responded to a Notice of Violation (NOV) related to the Vogtle Unit 3 nuclear island basemat reinforcement. The Notice of Violation was a result of direct inspections of ITAACs 3.3.00.02.a.i.b [761], 3.3.00.02.a.i.c [762], and 3.3.00.02.a.i.d [763]. A Severity Level IV violation (5200025/2012-008-02) of NRC requirements was issued.

In the response to the Notice of Violation, SNC committed to either provide a submittal to the NRC describing how the revised design fully meets the FSAR or submit a license amendment request on the revised design for critical sections of the basemat.

SNC has determined that the revised design meets the requirements of ACI 349-01 as delineated in UFSAR Figure 3H.5-3; thus a license amendment request is not required. The Enclosure to this letter describes how the revised design meets the UFSAR.

SNC requests NRC provide a response within 30 days regarding SNC conclusions that the Vogtle 3 licensing basis is being met.

If you have any question regarding this letter, please contact Mr. Dave Midlik at (205) 992-6860.

D092
NRD

Mr. Charles R. Pierce states he is the Regulatory Affairs Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Charles R. Pierce

Charles R. Pierce

Sworn to and subscribed before me this 3rd *day of* July, *2012*

Notary Public: Dana Marie Williams

My commission expires: 12/01/2014

NOTARY PUBLIC STATE OF ALABAMA AT LARGE
MY COMMISSION EXPIRES: Dec 1, 2014
BONDED THRU NOTARY PUBLIC UNDERWRITERS

CRP/DRC/dmw

Enclosure: Vogtle Unit 3 Nuclear Island Basemat Rebar Configuration

cc: Southern Nuclear Operating Company
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Mr. D. A. Bost, Chief Nuclear Officer (w/o enclosures)
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Mr. D. H. Jones, VP, Regulatory Affairs, Vogtle 3 & 4
Mr. J. R. Johnson, VP, Operational Readiness, Vogtle 3 & 4 (w/o enclosures)
Mr. T. E. Tynan, Site VP, Vogtle 1 & 2
Mr. D. M. Lloyd, Project Support Director, Vogtle 3 & 4 (w/o enclosures)
Mr. M. J. Ajluni, Nuclear Licensing Director
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Southern Nuclear Operating Company

ND-12-1393

Enclosure

Vogtle Unit 3 Nuclear Island Basemat Reinforcement

Vogtle Unit 3 Nuclear Island Basemat Reinforcement

The two UFSAR key requirements listed below and UFSAR Figure 3H.5-3 describe the Nuclear Island basemat reinforcement:

I. From UFSAR Section 3.8.4.2, "Applicable Codes, Standards, and Specifications": [*American Concrete Institute (ACI), Code Requirements for Nuclear Safety Related Structures, ACI-349-01*]*

II. From UFSAR Section 3.8.5.4.4, "Design Summary of Critical Sections":

[*Basemat between column lines 9.1 and 11 and column lines K and L*

This portion of the basemat is designed as a two way slab with the shorter directions spanning a distance of 23' 6" between the walls on column lines K and L. The slab is continuous with the adjacent slabs to the east and west. The critical loading is the bearing pressure on the underside of the slab due to dead and seismic loads. This establishes the demand for the top flexural reinforcement at mid span and for the bottom flexural and shear reinforcement at the walls. The basemat is designed for the member forces from the analyses]* described in Subsection 3.8.5.4.1. [*The top and bottom reinforcement in the east west direction of span are equal. The reinforcement provided is shown in sheets 1, 2 and 5 of Figure 3.8.5-3. Typical reinforcement details showing use of headed reinforcement for shear reinforcement are shown in Figure 3H.5-3.*

Basemat between column lines 1 and 2 and column lines K-2 and N

This portion of the basemat is designed as a two way slab with the shorter direction spanning a distance of 22' 0" between the walls on column lines 1 and 2. The slab is continuous with the adjacent slabs to the north and with the exterior wall to the south. The critical loading is the bearing pressure on the underside of the slab due to dead and seismic loads. This establishes the demand for the top flexural reinforcement at mid span and for the bottom flexural and shear reinforcement at wall 2. The basemat is designed for the member forces from the analyses on uniform soil springs]* described in Subsection 3.8.5.4.1. [*The reinforcement provided is shown in sheets 1, 2 and 5 of Figure 3.8.5-3. Typical reinforcement details showing use of headed reinforcement for shear reinforcement are shown in Figure 3H.5-3.*]*

The design of the nuclear island basemat reinforcement is in compliance with the Vogtle 3&4 UFSAR and ACI 349-01 as described by the Vogtle 3&4 UFSAR as follows:

- Basemat Layer 4 and 5 rebar are developed using a standard 90° hook with a standard hook development length. The required development length of a standard hook, described in ACI 349-01 Paragraph 12.5.2, is provided from the inside face of wall. Additional vertical hook length is provided for further conservatism.

- Basemat Layer 1 and 2 rebar are fully developed at the inside face of the wall using a 90° hook with vertical straight development length as identified in UFSAR Figure 3H.5-3. This satisfies ACI 349-01 Paragraph 12.1.1. As Layer 1 and 2 rebar are placed to the inside of the horizontal #11 skin reinforcement, a standard hook development length is

not achieved from the inside face of wall 1. As shown in UFSAR Figure 3H.5-3, the development is achieved through a combination of the hook with the straight development length in the vertical extension.

- Outside #11 wall reinforcement extends to the bottom of the basemat with a 90° hook and additional length (equal to the applicable straight development length) extending parallel to the Layer 1 reinforcement. This satisfies ACI 349-01 Paragraph 12.1.1. Full development of the wall reinforcement is achieved by vertical straight development length within the basemat. The hook and additional length are provided as additional anchorage of the reinforcement for added conservatism.

- Middle #10 wall dowels and inner #11 wall dowels are developed into the basemat with a standard straight development length detail, in accordance with ACI 349-01 requirements. Additional 90° bends of the middle #10 wall dowels are used to facilitate rebar placement for improved constructability and to provide additional margin. This additional length is not required to comply with ACI 349-01, does not modify the design function of the dowels, nor change the method of embedment described by the UFSAR.

Figure 1 below depicts the Vogtle reinforcement design. Figure 1 is consistent with UFSAR Figure 3H.5-3; however, it depicts more detail than UFSAR Figure 3H.5-3.

Figure 1