C. R. "Chuck" Pierce
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SOUTHERN COMPANY

MAY 17 2012

Docket Nos.: 52-025
52-026

ND-12-0947
10 CFR 50.90

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Response to Request for Additional Information Letter No. 01
Related to License Amendment Request (LAR) 12-001

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, by letter dated February 14, 2012 and revised by a letter dated March 12, 2012, Southern Nuclear Operating Company (SNC) requested an amendment to the Vogtle Electric Generating Plant (VEGP) Units 3 and 4 combined licenses (COLs) (License Nos. NPF-91 and NPF-92, respectively). During the course of the review of this LAR, the NRC staff identified the need for additional information to continue portions of the review. The NRC's request for additional information (RAI) was provided to SNC in RAI Letter No. 01 related to LAR-12-001, dated April 17, 2012 [ML12108A188]. The enclosure to this letter provides the requested 30-day response to the subject RAI, which is also referred to as electronic RAI (eRAI) 6382.

This letter contains no regulatory commitments.

Should you have any questions, please contact Mr. Wesley A. Sparkman at (205) 992-5061.

A001
NRO

Mr. C. R. Pierce states that 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

C. R. Pierce

C. R. Pierce

CRP/NH/dmw

Sworn to and subscribed before me this 17th *day of* May, *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

Enclosure: Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Response to Request for Additional Information Letter No. 01 Related to License Amendment Request (LAR) 12-001

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO (w/o enclosure)
Mr. J. A. Miller, Executive VP, Nuclear Development
Mr. D. A. Bost, Chief Nuclear Officer (w/o enclosure)
Mr. B. L. Ivey, VP, Regulatory Affairs
Mr. M. D. Rauckhorst, VP, Vogtle 3 & 4 Construction (w/o enclosure)
Mr. D. H. Jones, VP, Regulatory Affairs, Vogtle 3 & 4
Mr. J. R. Johnson, VP, Operational Readiness, Vogtle 3 & 4 (w/o enclosure)
Mr. T. E. Tynan, Site VP, Vogtle 1 & 2
Mr. D. M. Lloyd, Project Support Director, Vogtle 3 & 4 (w/o enclosure)
Mr. C. R. Pierce, Regulatory Affairs Director
Mr. M. J. Ajluni, Nuclear Licensing Director
Mr. D. L. Fulton, Environmental Manager
Mr. J. D. Williams, Site Support Manager, Vogtle 3 & 4 (w/o enclosure)
Mr. C. H. Mahan, Site Licensing Manager, Vogtle 3 & 4
Ms. A. G. Aughtman, Corporate Licensing Manager, Vogtle 3 & 4
Mr. W. A. Sparkman, Licensing Supervisor
Mr. D. W. Midlik, Licensing Supervisor
Document Services RTYPE: GOV0208
File AR.01.02.06

Nuclear Regulatory Commission
Mr. V. M. McCree, Region II Administrator (w/o enclosure)
Mr. F. M. Akstulewicz, Deputy Director Div. of New Reactor Licensing (w/o enclosure)
Mr. M. E. Tonacci, AP1000 Licensing Branch Chief (w/o enclosure)
Mr. R. G. Joshi, Lead Project Manager of New Reactors
Ms. D. L. McGovern, Project Manager of New Reactors
Mr. B. M. Bavol, Project Manager of New Reactors
Ms. M. A. Sutton, Environmental Project Manager
Mr. L. M. Cain, Senior Resident Inspector of VEGP 1 & 2
Mr. J. D. Fuller, Senior Resident Inspector of VEGP 3 & 4
Mr. G. Khouri, Senior Project Engineer VEGP 3 & 4
Mr. C. Abbott, Resident Inspector of VEGP 3 & 4
Mr. C. Huffman, Resident Inspector of VEGP 3 & 4

Georgia Power Company
Mr. B.H. Whitley, Nuclear Development Director

State of Georgia
Mr. J. H. Turner, Environmental Protection Division Director

Oglethorpe Power Corporation
Mr. M. W. Price, Executive VP and Chief Operating Officer
Mr. K. T. Haynes, Director of Contracts and Regulatory Oversight

Municipal Electric Authority of Georgia
Mr. J. E. Fuller, Senior VP, Chief Financial Officer
Mr. S. M. Jackson, VP, Power Supply

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Westinghouse Electric Company, LLC
Ms. J. Falascino, VP, Project Delivery (w/o enclosures)
Mr. T. H. Dent, VP, Consortium Project Director Vogtle Units 3 & 4 (w/o enclosure)
Mr. R. F. Ziesing, Director, Vogtle AP1000 Operations and Consortium Licensing (w/o encl.)
Mr. P. A. Russ, Director, AP1000 Global Licensing
Mr. R. A. DeLong, Director of U.S. & International Licensing (acting)
Mr. S. A. Bradley, Vogtle Project Licensing Manager
Mr. M. A. Melton, Manager, Regulatory Interfaces
Mr. T. J. Ray, Manager, AP1000 COL Licensing Support

Southern Nuclear Operating Company

ND-12-0947

Enclosure

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Response to Request for Additional Information Letter No. 01
Related to
License Amendment Request (LAR) 12-001

eRAI Tracking No. 6382

NRC RAI No. 01-1

1. In your cover letter dated March 12, 2012, you indicated that an additional departure was identified by Westinghouse to allow the use of higher strength carbon steel plate material (ASTM A572, Grade 60) for certain structural modules. However, there is no discussion or evaluation included in this LAR. Is this departure is related this license amendment request? Is this a Tier 2 departure? How was this departure evaluated (e.g., 10 CFR Part 52, Appendix D, Section VIII, B.5.b)? Since there is no information regarding this departure in the VEGP FSAR, please provide proposed changes to the FSAR to reflect the above and submit to the NRC.

SNC Response:

a) *Is this departure related to this license amendment request?*

This departure is indirectly related to this LAR because the use of the ASTM A572, Grade 60 higher strength carbon steel plate for modules results in a reduced stud spacing pattern which is different than the minimum spacing provided in the proposed revision to Note 2 of Figure 3.8.3-8, Sheet 1 for carbon steel. The proposed change to Note 2 in LAR-12-001 is based on 36 ksi yield strength carbon steel plate, which is the minimum yield strength for faceplate material. However, different grades of carbon steel could require different spacing density based on Code requirements needed to fully engage the concrete. Figure 3.8.3-8 depicts typical design details of the structural modules, and accordingly, the proposed change to Note 2 in LAR-12-001 is intended to be the stud spacing for 36 ksi yield strength carbon steel, and does not address alternate grades of carbon steel materials.

b) *Is this a Tier 2 departure?*

Yes, the use of higher strength carbon steel is documented in a Tier 2 departure; however, because A572 carbon steel is already specified in plant-specific DCD Table 3.8.4-6 as an acceptable material for use in the structural and miscellaneous steel construction of the AP1000, the departure only results in a clarification to the plant-specific DCD.

c) *How was this departure evaluated (e.g., 10 CFR Part 52, Appendix D, Section VIII, B.5.b)?*

The departure was reviewed using a series of screening questions that considers the criteria from 10 CFR Part 52, Appendix D, Section VIII, Paragraphs B.5.b and B.5.c to determine if the departure would require a license amendment. The result of that screening was that no license amendment was required.

d) *Since there is no information regarding this departure in the VEGP FSAR, please provide proposed changes to the FSAR to reflect the above and submit to the NRC.*

The change was incorporated into the VEGP Units 3 and 4 licensing basis prior to submittal of LAR-12-001. This change will be included in a future update to the

VEGP Units 3 and 4 FSAR, which is currently in process. The impact to the FSAR is as follows (deleted text shown in red strike-out font):

3.8.3.3.2 Concrete Placement Loads

The steel faceplates of the structural wall modules, designed for the hydrostatic pressure of the concrete, act as concrete forms. The concrete placement loads are 1050 pounds per square foot determined in accordance with ACI-347. The bending stress in the faceplate due to this hydrostatic pressure of the concrete is approximately 13 ksi, based on the assumption of a continuous faceplate, or 20 ksi based on the assumption of simple spans. The minimum yield strength of material for the faceplates is 36 ksi ~~for A36 steel~~. The stress is well below the allowable, since the plate is designed to limit the out-of-plane deflection. After the concrete has gained strength, these stresses remain in the steel; however, since the average residual stress is zero and since the concrete no longer requires hydrostatic support, the ultimate strength of the composite section is not affected, and the full steel plate is available to carry other loads as described below.

2. Enclosure1 (Summary of Description) of your amendment request dated March 12, 2012, states in part, "The change to Note 2 was inadvertently overlooked when the design basis calculations were previously revised and incorporated into AP1000 generic DCD." We understand that you are referencing the calculation "APP-1100-SUC-003, Revision 3, General Design of Shear Studs for Structural Modules for inside containment and CA20," which supports LAR 12-001 as your design basis calculation. The Vogtle COL incorporates Revision 19 of the AP1000 DCD (Revision 19 was published in June of 2011). The calculation that you are taking credit for was completed in October of 2011. As such, it (revision 3 of the calculation) was not part of Revision 19 of the AP1000 DCD. Please explain or clarify your claim that the calculation (revision 3) is part of your design basis. In addition, this calculation is a Westinghouse calculation and not the Vogtle-specific calculation. Please provide your plans to make this calculation part of the Vogtle Units 3 and 4 design/licensing basis.

SNC Response:

a) *Please explain or clarify your claim that the calculation (revision 3) is part of your design basis.*

Westinghouse calculation APP-1100-SUC-003, "General Design of Shear Studs for Structural Modules for Inside Containment and CA20," Revision 3 was issued after DCD Revision 19 was published. Revision 3 changed the vertical spacing for ¾" diameter studs in A36 carbon steel face plates from 9.6" to 10"; however, it was Revision 1 of this calculation, issued in October 2006 that changed the stud spacing for the modules that use stainless steel plate from a maximum 8-inch vertical spacing by 10-inch horizontal spacing requirement (i.e., 8" x 10") to a 6-inch by 6-inch (i.e. 6" x 6") maximum spacing requirement. Where the Summary of Description section of the LAR stated that "[t]he change to Note 2 was inadvertently overlooked

when the design basis calculations were previously revised," we were referring to Revision 1 of the calculation, which was issued prior to DCD Rev. 19.

Calculation APP-1100-SUC-003, Revision 3 is part of the Vogtle Unit 3 and 4 design basis. Design calculations are revised by Westinghouse as part of design finalization to incorporate design changes. As these revisions are processed, they are reviewed for potential impact to the Vogtle licensing basis (which includes AP1000 DCD Revision 19 and plant-specific departures). If impacts are identified, departures to the plant-specific DCD are processed in accordance with 10 CFR Part 52, Appendix D, Section VIII, paragraphs B.5.b and B.5.c to determine if a license amendment is required.

b) *In addition, this calculation is a Westinghouse calculation and not the Vogtle-specific calculation. Please provide your plans to make this calculation part of the Vogtle Units 3 and 4 design/licensing basis.*

As stated in the VEGP Units 3 and 4 FSAR, Chapter 1, Section 1.4, the owner licensees for VEGP Units 3 and 4 have executed a contract for Engineering, Procurement, and Construction (EPC) of the facilities with a Consortium comprised of Westinghouse and Stone & Webster, Inc. The Consortium will act as the AP1000 provider and the architect-engineer for VEGP Units 3 and 4. Westinghouse is responsible for the overall plant design. As such, Westinghouse is responsible for maintaining the design basis of VEGP Units 3 and 4 throughout plant construction.

The Westinghouse calculation process includes a requirement to determine the applicability of each calculation. As indicated in the Plant Applicability section on the bottom of the cover sheet of the Westinghouse Calculation APP-1100-SUC-003, this calculation is applicable to "All AP1000 plants" with "No exceptions"; therefore, this calculation is part of the VEGP Units 3 & 4 design basis. Following NRC approval of LAR-12-001, SNC will implement the license amendment by incorporating the approved departure to plant-specific DCD Figure 3.8.3-8, Sheet 1 (which appropriately reflects the supporting calculation, APP-1100-SUC-003, Rev. 3) to become part of the VEGP Units 3 and 4 licensing basis.