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Docket Nos.: 52-025
52-026

AR-08-1454

U.S. Nuclear Regulatory Commission
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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4 Combined License Application
Response to Request for Additional Information Letter No. 002

Ladies and Gentlemen:

By letter dated March 28, 2008, Southern Nuclear Operating Company (SNC) submitted an application for combined licenses (COLs) for proposed Vogtle Electric Generating Plant (VEGP) Units 3 and 4 to the U.S. Nuclear Regulatory Commission (NRC) for two Westinghouse AP1000 reactor plants, in accordance with 10 CFR Part 52. During the NRC's detailed review of this application, the NRC identified a need for additional meteorological information required to complete their review of the COL application's Final Safety Analysis Report (FSAR) Subsections 2.3.1, "Regional Climatology," and 2.3.5, "Long-Term (Routine) Diffusion Estimates." By letter dated August 29, 2008, the NRC provided SNC with Request for Additional Information (RAI) Letter No. 002 concerning this meteorological information need. This RAI letter contains three RAI questions numbered 02.03.01-1, 02.03.01-2 and 02.03.05-1. The enclosure to this letter provides the SNC response to these RAIs.

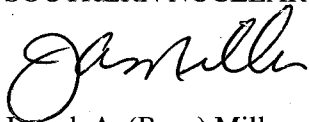
If you have any questions regarding this letter, please contact Mr. Wes Sparkman at (205) 992-5061.

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Mr. J. A. (Buzz) Miller states he is a Senior Vice President 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



Joseph A. (Buzz) Miller

Sworn to and subscribed before me this 18 day of September, 2008

Notary Public: Glenn H. Buie

My commission expires: 05/06/09

JAM/BJS/dmw

Enclosure: Response to NRC RAI Letter No. 002 on the VEGP Units 3 & 4 COL Application
Involving Meteorology

cc: Southern Nuclear Operating Company

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Document Services RTYPE: AR01
File AR.01.02.06

Nuclear Regulatory Commission

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Southern Nuclear Operating Company

AR-08-1454

Enclosure

**Response to NRC RAI Letter No. 002
on the VEGP Units 3 & 4 COL Application
Involving Meteorology**

FSAR Subsection 2.3.1, Regional Climatology

eRAI Tracking No. 539

NRC RAI Number 02.03.01-1:

FSAR Section 2.3.1.3.4 states that for the VEGP site, the 100-year snow load is 10 psf which is well within the 63 psf design basis snow load of the AP1000. The 10 psf is a ground snow load value, whereas the 63 psf is a roof snow load value. Please clarify why 63 psf was used instead of 75 psf, as given in FSAR Table 2.0-201?

SNC Response:

The 100-year return period ground-level snow load value of 10 psf is a Vogtle Early Site Permit (ESP) site characteristic that was determined in accordance with ASCE Standard 07-02, "Minimum Design Loads for Buildings and Other Structures" (January 2002), as described in ESP Application (ESPA) Site Safety Analysis Report (SSAR) Section 2.3.1.3.4.

The Westinghouse AP1000 Design Control Document (DCD) Site Parameter for snow/ice (as specified in both DCD Tier 1 Table 5.0-1 and Tier 2 Table 2-1) is a ground-level snow load of 75 psf with a safety importance factor of 1.2 and an exposure factor of 1.0. The 75 psf DCD site parameter (including the importance and exposure factors) is compared to the 10 psf site characteristic in FSAR Table 2.0-201.

The additional discussion of roof snow load in FSAR Subsection 2.3.1.3.4 relates to the translation of the ground snow load value (75 psf) to a roof snow load value (63 psf) using the guidance of ASCE Standard 07-98 (January 2000). For conservatism, the site 100-year ground snow load (10 psf) was not converted to a roof snow load using the guidance of ASCE Standard 07-98 (which would have resulted in a smaller snow load), but was compared directly to the DCD roof snow load value. This comparison of the site 100-year ground snow load (10 psf) with the AP1000 design basis roof snow load (63 psf) shows that the DCD design conservatively bounds the VEGP site characteristic.

NRC RAI Number 02.03.01-2:

To assist the NRC staff's review according to NUREG-0800, Section 2.3.1, please clarify whether both the AP1000 DCD site parameter and Vogtle ESP site characteristic for 3-second wind gust are based on a 100-year return period in FSAR Table 2.0-201.

SNC Response:

The Vogtle ESP site characteristic for 3-second wind gust is based on a 100-year return period, in accordance with NRC Review Standard RS-002, "Processing Applications for Early Site Permits" (May 2004), Section 2.3.1, and as described in ESPA SSAR Table 1-1 and Section 2.3.1.3.1. The 100-year return period value was obtained using the guidance of ASCE Standard 07-02, "Minimum Design Loads for Buildings and Other Structures" (January 2002). The 50-year mean recurrence interval value of 97 mph obtained from the ASCE standard was converted to a 100-year return period value of 104 mph using the guidance of the ASCE standard itself.

The Westinghouse design wind is specified in AP1000 DCD Tier 2, Section 2.3 as a basic wind speed of 145 mph with an annual probability of occurrence of 0.02 (i.e., a 50-year return period). This value is also listed in DCD Tier 2, Table 2-1, Site Parameters.

The comparison of the 100-year return period site characteristic value (per RS-002) with the 50-year return period DCD value (per AP1000 Tier 2 site parameter) conservatively shows that the AP1000 plant design envelopes the site characteristic.

FSAR Subsection 2.3.5, Long-Term (Routine) Diffusion Estimates

eRAI Tracking No. 543

NRC RAI Number 02.03.05-1:

FSAR Section 2.3.5 states that using the same assumptions and methodology as described in the ESPA SSAR (which relied on DCD Revision 15), along with the building dimensions provided in DCD Revision 16, the long-term (routine release) dispersion and deposition estimates were evaluated at the Dose Calculation EAB and at the various receptor locations described in the ESPA SSAR. The FSAR stated that this evaluation confirmed that the χ/Q values for the EAB and the various receptor locations are bounded by those provided in the ESPA.

Using an updated building cross sectional area of 2636 m² and a containment height of 60.9 m, while still maintaining the other XOQDOQ inputs consistent with the Vogtle ESP, the staff calculated slightly less conservative χ/Q values for both the EAB and the various receptors. Please reevaluate the potential changes in the χ/Q and D/Q values due to the change in AP1000 building dimensions. Given that some of the resulting values appear to be less conservative (i.e., higher values) please provide, as part of Section 2.3.5 of the COL application, an updated version of the information found in ESP Tables 2.3-17 and 2.3-18.

SNC Response:

In response to this request for additional information, the analysis for the long term atmospheric dispersion was reviewed and the conclusions as stated in COL Application (COLA) FSAR Subsection 2.3.5 were reconfirmed. Specifically, the evaluation confirmed that, using the same assumptions and methodology as described in the ESPA SSAR, along with the building dimensions provided in AP1000 DCD Revision 16, the χ/Q values for the Exclusion Area Boundary (EAB) and the various receptor locations are bounded by those provided in the ESPA SSAR.

It should be noted that the evaluations performed for both the ESPA and the COLA used the most recent expression of the meteorological data as described in the joint frequency distributions at the 10 meter elevation in ESPA Table 2.3-10. This data was revised from the original submittal of the ESPA (August 14, 2006) and was provided to the NRC in SNC letter AR-07-0453, dated March 26, 2007, in response to ESPA RAI Number 2.3.3-1.