

August 12, 2015

Mr. B. H. Whitley, Director  
Regulatory Affairs  
Southern Nuclear Operating Company, Inc.  
40 Inverness Center Parkway  
Birmingham, AL 35242

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 – UPDATED  
GROUND MOTION RESPONSE SPECTRA (TAC NO. RP0411)

Dear Mr. Whitley:

By letter dated November 5, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14302A180), the U.S. Nuclear Regulatory Commission (NRC or Commission) issued a voluntary request to Vogtle Electric Generating Plant (VEGP) requesting an updated Ground Motion Response Spectra (GMRS) and Foundation Input Response Spectra (FIRS), using (1) NUREG-2115, "Central and Eastern United States Seismic Source Characterization for Nuclear Facilities," (2) the most recent Electric Power Research Institute ground motion models for the Central and Eastern United States, and (3) a site response analysis that appropriately considers the uncertainty in the subsurface rock properties beneath the plant.

By letter dated December 5, 2014 (ADAMS Accession No. ML14342A467), VEGP submitted its response for Vogtle Electric Generating Plant Units 3 and 4. The licensee stated in its December 5, 2014, letter that the VEGP Units 1 and 2 GMRS was used to develop new FIRS and In-Structure Response Spectra (ISRS) for VEGP Units 3 and 4 similar to the process provided in the VEGP Units 3 and 4 Combined Operating License Application (COLA) Part 2 Appendix 3G. For the GMRS, the licensee conducted a site specific probabilistic seismic hazard analysis (PSHA) using NUREG-2115 and the latest EPRI ground motion model (EPRI 2013) for VEGP Units 1 and 2. The staff agrees that the use of the VEGP Units 1 and 2 GMRS for VEGP Units 3 and 4 is appropriate given the proximity and similarity of subsurface conditions. Also, the licensee evaluated the impact on the seismic design margin for VEGP Units 3 and 4 due to the updated FIRS developed from the VEGP Units 1 and 2 GMRS. The licensee's evaluation followed the same analysis approach described in Vogtle Electric Generating Plant Units 3 and 4 COL Application Part 2 Final Safety Analysis Report, Revision 5, Section 3.7 Seismic Design Appendix 3G Nuclear Island Seismic Analysis. The licensee's December 5, 2014, submittal included figures showing the ISRS comparisons at the six key

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locations based on the updated FIRS. The staff reviewed these figures, which demonstrate that the updated in-structure seismic demands are bounded by the AP1000 standard design seismic demands. Based on the staff review, no change in the seismic licensing basis or further information is necessary.

If you have any questions, please contact me at (301) 415-3025 or [Chandu.Patel@nrc.gov](mailto:Chandu.Patel@nrc.gov).

Sincerely,

*/RA/*

Chandu Patel, Senior Project Manager  
Licensing Branch 4  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos.: 52-025  
52-026

cc: See next page

locations based on the updated FIRS. The staff reviewed these figures, which demonstrate that the updated in-structure seismic demands are bounded by the AP1000 standard design seismic demands.

If you have any questions, please contact me at (301) 415-3025 or [Chandu.Patel@nrc.gov](mailto:Chandu.Patel@nrc.gov).

Sincerely,

**/RA/**

Chandu Patel, Senior Project Manager  
Licensing Branch 4  
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Office of New Reactors

Docket Nos.: 52-025  
52-026

cc: See next page

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NRO-002

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| <b>DATE</b> | 5/26/15     | 5/21/15     | 6/19/15      | 7/2/15      |
| OFFICE      | DNRL/LB4:BC | NRO/DE:D    | NRO/DSEA:D   | DNRL/LB4:PM |
| <b>NAME</b> | LBurkhart   | JTappert    | SFlanders    | CPatel (s)  |
| <b>DATE</b> | 7/2/15      | 7/20/15     | 8/2/15       | 8/10/15     |

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(Revised 04/27/2015)

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