

**Southern Nuclear
Operating Company, Inc.**
42 Inverness Center Parkway
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Docket Nos.: 52-025
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ND-10-0813

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. 053

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 information, involving the offsite electrical power system, required to complete their review of the COL application's Final Safety Analysis Report (FSAR) Section 8.2, "Offsite Power Systems." By letter dated March 25, 2010, the NRC provided SNC with Request for Additional Information (RAI) Letter No. 053 concerning this information need. That RAI letter contained one RAI question numbered 08.02-14. The enclosure to this letter provides SNC's response to this RAI.

This letter identifies changes that will be made to a future revision of the VEGP Units 3 and 4 combined license application (COLA).

If you have any questions regarding this letter, please contact Mr. Wes Sparkman at (205) 992-5061 or Ms. Amy Aughtman at (205) 992-5805.

DO92
NRD

Mr. C.R. Pierce states he is the AP1000 Licensing Manager 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 6th day of May, 2010

Notary Public: Dana M. Williams

My commission expires: 12/29/2010

CRP/BJS/dmw

Enclosure: Response to NRC RAI Letter No. 053 on the VEGP Units 3 and 4 COL Application



cc: Southern Nuclear Operating Company

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on the

VEGP Units 3 and 4 COL Application

FSAR Section 8.2, Offsite Power Systems

eRAI Tracking No. 4525

NRC RAI Number 08.02-14

Describe the inspection, testing and monitoring program to detect degradation of inaccessible or underground control and power cables that support equipment and other systems that are within the scope of 10 CFR 50.65. The description should include the frequency of testing and inspection. Guidance on the selection of electric cable condition monitoring can be found in Sections 3 and 4.5 of NUREG/CR-7000.

The design criteria for nuclear plant systems, structures, and components, which include electric power cables and instrumentation and controls cables, are given in Appendix A to 10 CFR 50. More specifically, as related to the safety functions of electric cables, 10 CFR 50, Appendix A, General Design Criterion 4, "Environmental and Dynamic Effects Design bases," states that "structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation." 10 CFR 50.65 (a)(1) states that, "Each holder of a license to operate a nuclear plant ...shall monitor the performance or condition of structures, systems, or components...in a manner sufficient to provide reasonable assurance that such structures, systems, and components...are capable of fulfilling their intended functions." Standard Review Plan Section 8.2III.L, states, "Operating experience has shown that undetected degradation of underground ...could result in multiple equipment failures. Underground or inaccessible power and control cable runs that are susceptible to protracted exposure to wetted environments or submergence ... should be reviewed. Additionally, Generic Letter 2007-01, "Inaccessible or Underground Power Cable Failures That Disable Accident Mitigation Systems or Cause Plant Transients," identifies instances where cable insulation degradation due to continuous wetting or submergence could affect multiple underground cable circuits at a plant site.

Cables failures have a variety of causes: manufacturing defects, damaged cause by shipping and installation and exposure to electrical transients or abnormal environmental conditions during operation. Electrical cables in nuclear power plants are usually located in dry environment, but some cables are exposed to wetted environments or submergence in inaccessible locations such as buried conduits, cable trenches, cable troughs, underground duct banks, underground vaults, and direct buried installations.

Other Design Centers such as ESBWR (8.3.3.2), and EPR (Table 1.8-2, item 8.3-2) have identified cable monitoring as Combine Operating License (COL) action item for COL applicants to describe their inspection, testing and monitoring program to detect the degradation of inaccessible or underground cables that support diesel generators, offsite power, essential service water system that are within the scope of 10 CFR 50.65.

SNC Response:

This RAI requested additional information based on Generic Letter (GL) 2007-01, 10 CFR 50.65 and recently released NUREG/CR-7000. GL 2007-01 is addressed in COLA Part 02, Chapter 1. GL 2007-01 will be considered as part of 10 CFR 50.65 maintenance rule (MR) program implementation. The MR program will not be implemented until prior to Fuel Load; as such, specific information necessary to determine appropriate inspections, tests and monitoring is not available at this time. In order to determine the method and frequency, a review of detailed design and procurement information is needed. NUREG/CR-7000 provides detailed

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recommendations on implementing a cable condition monitoring program. This NUREG was released in January of 2010 and has not been evaluated at this time. However, the latest industry experience and other available information, including NUREG/CR-7000, will be followed in developing a cable condition monitoring program as part of the maintenance rule program. A description of this aspect of the maintenance rule program will be added to the FSAR in response to this RAI as shown below.

This response is expected to be STANDARD for the S-COLAs.

The information shown below will be incorporated into a future application revision.

Associated VEGP COL Application Revisions:

COLA Part 2, FSAR Chapter 17, Section 17.6, will be revised to include the following new paragraph at the end of the section with a left margin annotation (LMA) of STD SUP 17.6-2:

Condition monitoring of underground or inaccessible cables is incorporated into the maintenance rule program. The cable condition monitoring program incorporates lessons learned from industry operating experience, addresses regulatory guidance, and utilizes information from detailed design and procurement documents to determine the appropriate inspections, tests and monitoring criteria for underground and inaccessible cables within the scope of the maintenance rule (i.e., 10 CFR 50.65). The program takes into consideration Generic Letter 2007-01.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None