UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 16, 2016

Mr. Charles R. Pierce
Regulatory Affairs Director
Southern Nuclear Operating Co., Inc.
P.O. Box 1295, Bin 038
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2, AND JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 – FOLLOWUP REQUEST FOR ADDITIONAL INFORMATION (CAC NOS. MF8061 AND MF8062)

Dear Mr. Pierce:

By application dated August 4, 2016 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML16221A072), Southern Nuclear Operating Company, Inc. (SNC, the licensee) submitted Request for Alternative VEGP-ISI-ALT-11, Version 2.0, for the Vogtle Electric Generating Plant, Units 1 and 2, and Alternative FNP-ISI-ALT-19, Version 2.0, for the Joseph M. Farley Nuclear Plant, Unit 1. Alternatives VEGP-ISI-ALT-11, Version 2.0, and FNP-ISI-ALT-19, Version 2.0, propose to eliminate the reactor pressure vessel (RPV) threads-in-flange examination requirement as an alternative to certain requirements of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code for inservice inspection of RPV components.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's previous responses, dated October 24, 2016 (ADAMS Accession No. ML16298A049), to the NRC staff's Request for Additional Information (RAI) (ADAMS Accession No. ML16298A049), and has determined that the enclosed followup RAI is needed to complete its review. Please provide responses to these questions within 30 days of the date of this letter.

Sincerely,

Bob Martin

Bob Martin, Senior Project Manager
Plant Licensing Branch, II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-424, 50-425, and 50-348

Enclosure:
Followup Request for Additional Information

UNITED STATES
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FOLLOWUP REQUEST FOR ADDITIONAL INFORMATION

ALTERNATIVE REQUESTS VEGP-ISI-ALT-11, VERSION 2.0

AND FNP-ISI-ALT-19, VERSION 2.0

REACTOR PRESSURE VESSEL FLANGE BOLT HOLE THREAD EXAMINATION

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

SOUTHERN NUCLEAR OPERATING COMPANY

DOCKET NOS. 50-424, 50-425, 50-348

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Followup RAI-1 (Related to NRC RAI-5, Question 2a)

The licensee's response to the previous RAI-5, Question 2a, indicated that, "Thermal loads are applied as uniform surface convection on the inside surface only." This response did not clarify how the heatup transient was applied. Please provide: (a) the thermal boundary conditions for the top, bottom, and RPV flange outer surfaces to confirm that this part of modeling is appropriate, and (b) a revision of the response to this RAI regarding how the heatup transient was applied to the thermal model since the application of thermal loads was not answered clearly.

Enclosure

Followup RAI-2 (Related to Previous RAI-5, Question 3)

Regarding selection of the heatup transient instead of the cooldown transient in the finite element method (FEM) analysis, the licensee's response to previous RAI-5, Question 3, states that, "Since heatup and cooldown have the same temperature change rate, in linear elastic analysis they will produce identical maximum and minimum stress range for crack growth calculation, despite an opposite time history." The above description of stresses does not appear to be consistent with the similar pressure-temperature (PT) limits application (ignoring the crack growth part because it does not apply to the PT limit application), wherein the cooldown transient will create tensile stresses in the RPV inner wall and compressive stresses in the outer wall, and vice versa for the heatup transient. Please provide additional discussion on your response to previous RAI-5, Question 3, to justify that heatup and cooldown transients will produce identical maximum and minimum stress ranges.

Followup RAI-3 (Related to Previous RAI-5, Question 4a)

The licensee's response to previous RAI-5, Question 4a, indicated that, "... the FEM model for the applied K determination is the same as the FEM model for the stress determination." Please clarify how loads are applied to both the FEM model for the stress determination and the FEM model for the applied K determination.

Followup RAI-4 (Related to Previous RAI-5, Question 6)

The licensee's response to previous RAI-5, Question 6, indicated that, "... the maximum calculated K at any crack depth is about 20ksi$\sqrt{in}$. This requires a K_{IC} of 20*$\sqrt{10}$ = 3.2ksi$\sqrt{in}$." The K_{IC} of 3.2 ksi$\sqrt{in}$ may be a misprint of 63.2 ksi$\sqrt{in}$. Please provide the operating temperature at the time when K is 20 ksi$\sqrt{in}$ to justify that "an RT_{NDT} of up to 70°F will not affect the results."

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/RA/

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Followup Request for Additional Information

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ADAMS Accession No.: ML16308A401 *by e-mail

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