Southern Nuclear

**Justin T. Wheat**
Nuclear Licensing Manager

40 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242
205 992 5998 tel
205 992 7601 fax

jtwheat@southernco.com

FEB 2 0 2018

Docket Nos.: 50-321
50-366

NL-18-0211

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

Edwin I. Hatch Nuclear Plant Units 1 and 2
Response to Request for Additional Information Regarding Alternative
HNP-ISI-ALT-05-05 to Adopt Code Case N-702

Ladies and Gentlemen:

By letter dated June 5, 2017, Southern Nuclear Operating Company (SNC) submitted Alternative HNP-ISI-ALT-05-05 to allow a reduced percentage requirement for nozzle-to-vessel weld and inner radius examinations based on the applicability criteria of Code Case N-702. On September 9, 2017, the Nuclear Regulatory Commission (NRC) staff notified SNC that additional information is needed for the staff to complete their review. The Enclosure provides the SNC response to the NRC staff's request regarding the probability of failure (PoF) per reactor year due to normal operation for the reactor pressure vessel (RPV) nozzle-to-shell weld and RPV nozzle blend radii in the reactor recirculation outlet (N1) and inlet (N2) nozzles.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at 205.992.7369.

Respectfully submitted,

Justin T. Wheat
Nuclear Licensing Manager

JTW/RMJ

Enclosure: Structural Integrity Associates Report No. 1800072.401.R0

Cc: Regional Administrator, Region II
NRR Project Manager – Hatch
Senior Resident Inspector – Hatch
RTYPE: CHA02.004

**Edwin I. Hatch Nuclear Plant Units 1 and 2**
**Response to Request for Additional Information Regarding Alternative**
**HNP-ISI-ALT-05-05 to Adopt Code Case N-702**

**Enclosure**

**Structural Integrity Associates Report No. 1800072.401.R0**

Structural Integrity Associates, Inc.®

5215 Hellyer Ave.
Suite 210
San Jose, CA 95138-1025
Phone: 408-978-8200
Fax: 408-978-8964
www.structint.com
wwong@structint.com

February 8, 2018
Report No. 1800072.401.R0
Quality Program: ☒ Nuclear ☐ Commercial

Subject: Normal Operating Probability of Failure for Code Case N-702 Using VIPERNOZ

SI Calculation No. 1500231.303 Revision 0 determined that probability of failure (PoF) per reactor year due to a Low Temperature Over Pressure (LTOP) event for the RPV nozzle-to-shell-weld and RPV nozzle blend radii in the Hatch reactor recirculation outlet (N1) and inlet (N2) nozzles are below the acceptance criterion of $5\times10^{-6}$ per year. The work was performed using the same methodology used in BWRVIP-108, which is the technical basis for ASME Code Case N-702 and similar to the work in BWRVIP-05.

In the NRC staff's request for additional information (RAI), sent September 9, 2017, the PoF due to normal operation was requested to complete their review for Southern Nuclear Operating Company's relief HNP-ISI-ALT-05-05.

In response to the RAI, the PoF due to normal operation was calculated for both the RPV nozzle-to-shell-weld and RPV nozzle blend radii in the Hatch N1 and N2 nozzles. For the N1 nozzles, the maximum PoF per year due to normal operation is $2.5\text{x}10^{-8}$ compared to $1.31\text{x}10^{-7}$ due to an LTOP event. For the N2 nozzles, maximum PoF per year due to normal operation is $8.0\text{x}10^{-9}$ compared to $1.31\text{x}10^{-7}$ due to an LTOP event. These are below the PoF for each corresponding RPV nozzle due to an LTOP event and the acceptance criterion of $5\times10^{-6}$ per year. The normal operation PoF was calculated using the same methodology as the normal operation PoF number reported in the Safety Evaluation of BWRVIP-108.

Prepared by:

Wilson Wong
Senior Engineer

2/8/18
Date

Verified by:

S. S. Tang
Associate

2/8/18
Date

Reviewed by:

Terry J. Herrmann, P.E.
Senior Associate

2/8/18
Date

Approved by:

Wilson Wong
Senior Engineer

2/8/18
Date