Charles R. Pierce
Regulatory Affairs Director

Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.7872
Fax 205.992.7601

SOUTHERN COMPANY

November 25, 2013

Docket Nos.: 50-424
50-425

NL-13-2423

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

Vogtle Electric Generating Plant
Response to Request for Information Regarding
VEGP-ISI-ALT-05 Version 1 and VEGP-ISI-ALT-06 Version 1

Ladies and Gentlemen:

By letter dated August 29, 2012 (Agencywide Documents Access and Management System Accession (ADAMS) No. ML12243A248), Southern Nuclear Operating Company, Inc. requested the U.S. Nuclear Regulatory Commission (NRC) approval of proposed inservice inspection (ISI) alternatives VEGP-ISI-ALT-05, Version 1 and VEGP-ISI-ALT-06, Version 1. These alternatives propose onetime extensions of examination of category B-A reactor vessel welds and selected examination category B-D reactor vessel nozzle welds and reactor vessel inside radius sections from a ten-year examination period to a twenty-year examination period.

By letter dated October 29, 2013 (ADAMS No. ML13296A789) the NRC issued a Request for Additional Information (RAI) containing three additional questions. Enclosure 1 provides the SNC response to the RAI questions. Enclosure 2 provides the requested evaluation per RAI question 2.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at (205) 992-7369.

Respectfully submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Enclosures: 1. SNC Response to NRC RAIs
2. Requested Evaluation per NRC RAI Question 2

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. T. E. Tynan, Vice President – Vogtle
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. B. J. Adams, Vice President – Fleet Operations
RType: CVC7000

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Senior Project Manager - Vogtle
Mr. L. M. Cain, Senior Resident Inspector – Vogtle

Vogtle Electric Generating Plant
Response to Request for Information Regarding
VEGP-ISI-ALT-05 Version 1 and VEGP-ISI-ALT-06 Version 1

Enclosure 1

SNC Response to NRC RAIs

1. NRC RAI

Request for alternative VEGP-ISI-ALT-05 states that VEGP, Unit 1, reactor pressure vessel (RPV) examinations currently scheduled for 2015 will be deferred until 2026, plus or minus one refueling outage, and request for alternative VEGP-ISI-ALT-06 states that VEGP, Unit 2, RPV examinations currently scheduled for 2016 will also be deferred until 2026, plus or minus one refueling outage. These dates are not identical to those mentioned in the cover letter dated August 29, 2012. In the safety evaluation of the relief requests, the NRC staff plans to reference only the dates appearing in VEGP-ISI-ALT-05 and VEGP-ISI-ALT-06. Please comment if you disagree.

SNC Response to NRC RAI # 1

SNC agrees with the plans of the NRC staff to reference only the dates appearing in VEGP-ISI-ALT-05 and VEGP-ISI-ALT-06. The dates provided in the cover letter dated August 29, 2012 are consistent with the refueling outages projected during the third period of the fourth 10-Year Inservice Inspection Interval in which SNC anticipates that the applicable reactor pressure vessel examinations will be performed. These projected refueling outages are within the dates appearing in VEGP-ISI-ALT-05 and VEGP-ISI-ALT-06.

2. NRC RAI

Regarding evaluation of indications identified in past inservice inspection (ISI) examinations, Table 2 of VEGP-ISI-ALT-05 and Table 2 of VEGP-ISI-ALT-06 state that "these indications are acceptable per Table IWB-3510-1 of Section XI of the ASME Code." Please provide these evaluations to support the conclusion.

SNC Response to NRC RAI # 2

As indicated in alternative VEGP-ISI-ALT-05, there were two indications identified on unit 1 in the beltline region during the most recent inservice inspection. These two indications are contained within two welds. As indicated in alternative VEGP-ISI-ALT-06, there were six indications identified on unit 2 in the beltline region during the most recent inservice inspection. These six indications are contained within three welds.

Unit 1 inspections occurred during the 1R13 (Fall 2006) refueling outage and unit 2 inspections occurred during the 2R12 (Spring 2007) refueling outage.

Those welds identified to contain indications on unit 1 were as follows:

- 11201-V6-001-W15 (Intermediate Shell Longitudinal Weld at 0 Degrees)
- 11201-V6-001-W17 (Intermediate Shell Longitudinal Weld at 240 Degrees)

Those welds identified to contain indications on unit 2 were as follows:

- 21201-V6-001-W17 (Intermediate Shell Longitudinal Weld at 240 Degrees)
- 21201-V6-001-W18 (Lower Shell Longitudinal Weld at 90 Degrees)
- 21201-V6-001-W20 (Lower Shell Longitudinal Weld at 330 Degrees)

Also, as indicated in the two alternatives the indications found in the welds were evaluated as being acceptable when utilizing Table IWB-3510-1. The following page contains a table indicating the results from the respective reactor vessel examination summary for the welds listed above.

Vogtle Unit 1 Reactor Vessel Examination Summary - Year 2006 Examinations				
Code Category	Weld/Volume Description	Weld Numbers	Recordable Indications	Comments / Resolutions
B-A	Intermediate Shell Longitudinal Weld @ 0°	11201-V6-001-W15	1	Allowable per ASME XI 1989, IWB-3510-1
B-A	Intermediate Shell Longitudinal Weld @ 240°	11201-V6-001-W17	1	Allowable per ASME XI 1989, IWB-3510-1

Vogtle Unit 2 Reactor Vessel Examination Summary - Year 2007 Examinations				
Code Category	Weld/Volume Description	Weld Numbers	Recordable Indications	Comments / Resolutions
B-A	Intermediate Shell Longitudinal Weld @ 240°	21201-V6-001-W17	1	Allowable per ASME XI 1989, IWB-3510-1
B-A	Lower Shell Longitudinal Weld @ 90°	21201-V6-001-W18	3	Allowable per ASME XI 1989, IWB-3510-1
B-A	Lower Shell Longitudinal Weld @ 330°	21201-V6-001-W20	2	Allowable per ASME XI 1989, IWB-3510-1

Enclosure 2 contains the evaluation data sheet or the "indication assessment" completed during the respective refueling outage for the welds identified to contain indications.

3. NRC RAI

The neutron fluence for all RPV materials and the chemistry factors for the RPV materials based on surveillance data (in Table 3 in VEGP-ISI-ALT-05 for Unit 1 and Table 3 in VEGP-ISI-ALT-06 for Unit 2) are different from their corresponding values in the license renewal application that was approved in 2009. Please provide the basis for these changes, including a list of additional surveillance capsule reports and updated neutron fluence evaluations which contributed to the changes.

SNC Response to NRC RAI # 3

Vogtle Unit 1:

The reactor vessel neutron fluence values used for the Vogtle Unit 1 ISI interval extension evaluation were based on ex-vessel neutron dosimetry data documented in WCAP-17239-NP, Revision 1 (Ref. 1). This data was taken from the most recent reactor vessel neutron fluence evaluations at the time the ISI interval extension evaluation was completed. The reactor vessel neutron fluence values used for the license renewal application submitted in 2007 were taken from capsule data obtained prior to the use of ex-vessel neutron dosimetry documented in WCAP-17239-NP, Revision 1.

Chemistry factor values are a function of material properties (Regulatory Guide 1.99, Revision 2 (Ref. 2), Position 1.1) or the most recent surveillance capsule test results (Regulatory Guide 1.99, Revision 2, Position 2.1). The chemistry factor values used in the Vogtle Unit 1 ISI interval extension evaluation are documented in WCAP-17076-NP, Revision 0 (Ref. 3). The most recent surveillance capsule data is documented in WCAP-17009-NP, Revision 1 (Ref. 4). The chemistry factor values used for the license renewal application submitted in 2007 were the result of data obtained prior to the development of WCAP-17076-NP, Revision 0, and WCAP-17009-NP, Revision 1.

Vogtle Unit 2:

The reactor vessel neutron fluence values used for the Vogtle Unit 2 ISI interval extension evaluation were based on ex-vessel neutron dosimetry data documented in WCAP-17350-NP, Revision 0 (Ref. 5). This data was taken from the most recent reactor vessel neutron fluence evaluations at the time the ISI interval extension evaluation was completed. The reactor vessel neutron fluence values used for the license renewal application submitted in 2007 were taken from capsule data obtained prior to the use of ex-vessel neutron dosimetry documented in WCAP-17350-NP, Revision 0.

Chemistry factor values are a function of material properties (Regulatory Guide 1.99, Revision 2, Position 1.1) or the most recent surveillance capsule test results (Regulatory Guide 1.99, Revision 2, Position 2.1). The chemistry factor values used in the Vogtle Unit 2 ISI interval extension evaluation are documented in WCAP-17353-NP, Revision 0 (Ref. 6). The most recent surveillance capsule

data is documented in WCAP-17343-NP, Revision 0 (Ref. 7). The chemistry factor values used for the license renewal application submitted in 2007 were the result of data obtained prior to the development of WCAP-17353-NP, Revision 0, and WCAP-17343-NP, Revision 0.

References:

1) WCAP-17239-NP, Revision 1, *Ex-Vessel Neutron Dosimetry Program for A. W. Vogtle Unit 1 Cycle 15*," July 2010.

2) NRC Regulatory Guide 1.99, Revision 2, *Radiation Embrittlement of Reactor Vessel Materials*, May 1988.

3) WCAP-17076-NP, Revision 0, *Vogtle Unit 1 Heatup and Cooldown Limit Curves for Normal Operation*, July 2009.

4) WCAP-17009-NP, Revision 1, *Analysis of Capsule W from the Vogtle Unit No. 1 Reactor Vessel Radiation Surveillance Program*, April 2009 (ADAMS Accession Number: ML091550356).

5) WCAP-17350-NP, Revision 0, *Ex-Vessel Neutron Dosimetry Program for A. W. Vogtle Unit 2 Cycle 14*, December 2010.

6) WCAP-17353-NP, Revision 0, *Vogtle Unit 2 Heatup and Cooldown Limit Curves for Normal Operation*, August 2011.

7) WCAP-17343-NP, Revision 0, *Analysis of Capsule Z from the Southern Nuclear Operating Company Vogtle Unit 2 Reactor Vessel Radiation Surveillance Program*, March 2011 (ADAMS Accession Number: ML110800303).

Vogtle Electric Generating Plant
Response to Request for Information Regarding
VEGP-ISI-ALT-05 Version 1 and VEGP-ISI-ALT-06 Version 1

Enclosure 2

Requested Evaluation per NRC RAI Question 2

WESDYNE INTERNATIONAL

INDICATION ASSESSMENT

PLANT: VOGTLE — UNIT: 1

PROCEDURE: PDI-ISI-254 — REV.: 7

ANALYST: [signature] — LEVEL: III — DATE: 9-30-06

FILE / BUFFER	WELD NO.	INDICATION NO.	BEAM ANGLE	BEAM DIRECTION	CLASSIFICATION VOLUMETRIC / PLANAR	APPLICABLE "t"	FLAW DEPTH MIN / MAX	LENGTH (L)	SURF. / SUB.	S. DIM.	Y VALUE (S / a)	2a DIM. / a DIM.	a / L VALUE (0.50 MAX)	a / t%	ALLOWABLE a / t%	P MAX AMP	E X (SWP#)	A YB	K ZB	NOTES
W9-PRP-0_01	W15	1	45	CCW	P	9.63	1.20 / 1.36	3.1	SUB	1.04	1	0.16 / 0.08	0.03	0.83	2.1	80	149.0"	32°	1.28"	(1)

NOTES (1) Allowable per ASME XI, 1989; IWB-3510-1

Calibration Data Sheet No. LS1

Acquisition Log Sheet No. W9-1

Analysis Log Sheet No. W9-1

WESDYNE INTERNATIONAL

INDICATION ASSESSMENT

PLANT: VOGTLE — UNIT: 1

PROCEDURE: PDI-ISI-254 — REV.: 7

ANALYST: [signature] — LEVEL: III — DATE: 9-30-06

FILE / BUFFER	WELD NO.	INDICATION NO.	BEAM ANGLE	BEAM DIRECTION	CLASSIFICATION VOLUMETRIC / PLANAR	APPLICABLE "t"	FLAW DEPTH MIN / MAX	LENGTH (L)	SURF. / SUB.	S. DIM.	Y VALUE (S / a)	2a DIM. / a DIM.	a / L VALUE (0.50 MAX)	a / t%	ALLOWABLE a / t%	P MAX AMP	E X (SWP#)	A YB	K ZB	NOTES
W11-PRP-240_02	W17	1	45	CW	P	9.63	0.71 / 1.03	1.6	SUB	0.55	1	0.32 / 0.16	0.10	1.66	2.5	70	170.0"	239.5°	0.87"	(1)

NOTES (1) Allowable per ASME XI, 1989; IWB-3510-1

Calibration Data Sheet No. LS2

Acquisition Log Sheet No. W11-1

Analysis Log Sheet No. W11-1

WESDYNE INTERNATIONAL

INDICATION ASSESSMENT

PLANT: VOGTLE UNIT: 2

PROCEDURE: PDI-ISI-254 REV.: 7

ANALYST: [signature] LEVEL: III DATE: 3/22/07

FILE / BUFFER	WELD NO.	INDICATION NO.	BEAM ANGLE	BEAM DIRECTION	CLASSIFICATION VOLUMETRIC / PLANAR	APPLICABLE "t"	FLAW DEPTH MIN / MAX	LENGTH (L)	SURF. / SUB.	S. DIM.	Y VALUE (S / a)	2a DIM. / a DIM.	a / L VALUE (0.60 MAX)	a / t%	ALLOWABLE a / t%	PAEK: MAX AMP	PAEK: X (SWP#)	PAEK: YB	PAEK: ZB	NOTES
W11-PAR-240_1	W17	1	45	DN	P	9.14	1.35	1.6	SUB	1.19	1	*0.125 / 0.063	0.04	0.68	2.16	99	242.4°	158.3	1.35	(1)

NOTES

* Procedural default size

(1) Allowable per ASME XI, 1989; IWB-3510-1

Calibration Data Sheet No. LS-1

Acquisition Log Sheet No. W11-1

Analysis Log Sheet No. W11-1

WESDYNE INTERNATIONAL

INDICATION ASSESSMENT

PLANT: VOGTLE — UNIT: 2

PROCEDURE: PDI-ISI-254 — REV.: 7

ANALYST: S F Sala — LEVEL: III — DATE: 3-22-07

FILE / BUFFER	WELD NO.	INDICATION NO.	BEAM ANGLE	BEAM DIRECTION	CLASSIFICATION VOLUMETRIC / PLANAR	APPLICABLE "t"	FLAW DEPTH MIN / MAX	LENGTH (L)	SURF. / SUB.	S. DIM.	Y VALUE (S / a)	2a DIM. / a DIM.	a / L VALUE (0.50 MAX)	a / t%	ALLOWABLE a / t%	P MAX AMP	E X (SWP#)	A YB	K ZB	NOTES
W3-PAR-01 -100A_4	W18	1	45	CW	P	9.14	2.40	0.5"	SUB	2.40	1	*0.125 / 0.063	0.13	0.68	2.7	57	239.5"	89.5°	2.56	(1)
W12-PRP-90_4	W18	2	45	CW	P	9.14	2.77	0.5"	SUB	2.61	1	*0.125 / 0.063	0.13	0.68	2.7	80	284.8"	89.8°	2.77	(1)
W12-PAR-90_6	W18	3	45	UP	P	9.14	4.74 / 5.18	2.0"	SUB	(FROM OD) 4.12	1	0.44 / 0.22	0.22	2.41	3.5	62	93.8°	264.6"	4.96	(1)

NOTES

* Procedural default size

(1) Allowable per ASME XI, 1989; IWB-3510-1

Calibration Data Sheet No. LS-4, 6

Acquisition Log Sheet No. W3-1

Analysis Log Sheet No. W3-2

WESDYNE INTERNATIONAL

INDICATION ASSESSMENT

PLANT: VOGTLE | UNIT: 2

PROCEDURE: PDI-ISI-254 | REV.: 7

ANALYST: [signature] | LEVEL: III | DATE: 3-22-07

FILE / BUFFER	WELD NO.	INDICATION NO.	BEAM ANGLE	BEAM DIRECTION	CLASSIFICATION VOLUMETRIC / PLANAR	APPLICABLE "t"	FLAW DEPTH MIN / MAX	LENGTH (L)	SURF. / SUB.	S. DIM.	Y VALUE (S / a)	2a DIM. / a DIM.	a / L VALUE (0.50 MAX)	a / t%	ALLOWABLE a / t%	P MAX AMP	E X (SWP#)	A YB	K ZB	NOTES
W3-PAR -270-360_4	W20	1	45	CW	P	9.14	2.99	0.75"	SUB	2.83	1	*0.125 / 0.063	0.08	0.68	2.4	37	239.5"	329.9°	2.99	(1)
W14-PRP-330_3	W20	2	45	CCW	P	9.14	3.15 / 3.52	1.0	SUB	2.99	1	.37 / .18	0.18	2.0	3.16	22	243.3"	330.2°	3.33	(1)

NOTES

* Procedural default size

(1) Allowable per ASME XI, 1989; IWB-3510-1

Calibration Data Sheet No. LS-4

Acquisition Log Sheet No. W3-1

Analysis Log Sheet No. W3-5