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Docket Nos.: 50-424
50-425

NL-08-0991

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

Vogtle Electric Generating Plant
License Renewal – LRA Annual Update, LRA Amendment 2, and
Updated Future Action Commitment List

Ladies and Gentlemen:

By letter dated June 27, 2007, Southern Nuclear Operating Company (SNC) submitted a License Renewal Application (LRA) for Vogtle Electric Generating Plant (VEGP) Units 1 and 2, seeking to extend the terms of the operating licenses an additional 20 years beyond the current expiration dates. Amendment 1 to the LRA was provided by letter dated March 20, 2008.

During Nuclear Regulatory Commission (NRC) review of the LRA, SNC is required by 10 CFR 54.21(b) to report changes to the VEGP current licensing basis that materially affect the contents of the LRA, including the Updated Final Safety Analysis Report supplement. SNC has completed a review of the pertinent documentation and identified the following changes, which materially affect the contents of the VEGP LRA:

- Implementation of Measurement Uncertainty Recapture (MUR) Power Uprate
- Installation of full structural weld overlays on the Unit 1 pressurizer spray nozzle, pressurizer safety and relief nozzles, and the pressurizer surge nozzle

MUR Power Uprate has also been the subject of recent Requests for Additional Information (RAIs) by the NRC staff. Enclosure 1 of this letter describes the LRA changes made necessary by both the annual update and the RAI responses.

Other LRA changes are necessary as a result of additional RAI responses. These amendments are also described in Enclosure 1.

SNC's responses to RAIs also resulted in changes to the VEGP License Renewal Commitment List. Enclosure 2 is the updated VEGP License Renewal Future Action Commitment List.

Mr. T. E. Tynan states he is a Vice President 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.

The NRC commitments contained in this letter are provided in Enclosure 2, Updated VEGP License Renewal Future Action Commitment List.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

T. E. Tynan

T. E. Tynan
Vice President – Vogtle

Sworn to and subscribed before me this 26 day of June, 2008.

Henry D. Chandra
Notary Public

Notary Public, Burke County, Georgia
My Commission Expires January 13, 2012

My commission expires: _____

TET/JAM/daj

Enclosures: 1. VEGP License Renewal Application Amendment 2
2. VEGP License Renewal Future Action Commitment List

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President w/o Enclosure
Mr. D. H. Jones, Vice President – Engineering w/o Enclosure
Mr. M. J. Ajluni, Manager, Nuclear Licensing w/ Enclosure
Mr. N. J. Stringfellow, Licensing Supervisor, Vogtle w/ Enclosure
RType: CVC7000

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator w/ Enclosure
Mr. R. A. Jervy, NRR Project Manager – Vogtle w/ Enclosure
Mr. G. J. McCoy, Senior Resident Inspector – Vogtle w/ Enclosure

State of Georgia
Mr. N. Holcomb, Commissioner – Department of
Natural Resources w/o Enclosure

Vogle Electric Generating Plant Units 1 and 2
Application for License Renewal – Amendment 2
Changes Resulting from Annual Update and RAI Responses

<p>RAI 4.3-2</p>	<p>The previously submitted license amendment in response to RAI 4.3-2 is revised as follows:</p> <p>Section 4.3.1.5.3, page 4.3-6</p> <p>Make the following changes in the 2nd paragraph:</p> <ul style="list-style-type: none">• Change “0.12127” to “0.11344” in the last sentence. <p>Table 4.3.1-3, page 4.3-19</p> <p>Make the following changes in the line for the “Surge line hot leg nozzle” in the “Final Analysis Using Projected CUF Calculated by FatiguePro” portion of the table:</p> <ul style="list-style-type: none">• Change “0.12127” to “0.11344” under Calculated EAF.
<p>Audit Question 4.3-12</p>	<p>The previously submitted license amendment in response to Audit Question 4.3-12 is revised as follows:</p> <p>Replace the last two paragraphs of the previous revision to Section 4.3.1.7 with the following:</p> <p style="padding-left: 40px;">Therefore, if the usage factor calculated for the nozzle subjected to operating transients is less than the design usage factor, it may be concluded that the adjacent class 1 auxiliary piping components' usage factors would be less than their design usage factors if evaluated for the same operating transients. Therefore, the existing HELB analyses for CVCS piping remain valid as long as the Fatigue Monitoring Program maintains the CUF of the charging nozzles less than or equal to 1.0 (see Section 4.3.1.5.4).</p> <p style="padding-left: 40px;">In summary, the existing VEGP HELB analyses have been shown to remain valid for the period of extended operation, except for the VEGP HELB analysis for CVCS piping which is maintained valid by the Fatigue Monitoring Program. Therefore, this TLAA has been demonstrated to be acceptable for the period of extended operation in accordance with 10 CFR 54.21(c)(1)(i) and 10 CFR 54.21(c)(1)(iii).</p> <p>Section A.3.2.1, page A-28</p> <p>Replace the first paragraph of the revision to Section A.3.2.1, on Page A-28, to say the following:</p> <p style="padding-left: 40px;">The existing VEGP HELB analyses have been shown to remain valid for the period of extended operation as long as the Fatigue Monitoring Program maintains the CUF of the charging nozzles less than or equal to 1.0. Therefore, this TLAA has been demonstrated to be acceptable for the period of extended operation in accordance with 10 CFR 54.21(c)(1)(i) and 10 CFR 54.21(c)(1)(iii).</p>

Vogtle Electric Generating Plant Units 1 and 2
Application for License Renewal – Amendment 2
Changes Resulting from Annual Update and RAI Responses

RAI s 4.2.1-04, 4.2.1-05, and B.3.25 and Annual Update	<p>Section 1.4, page 1.4-1</p> <p>Replace the second paragraph with the following:</p> <p style="padding-left: 40px;">The nuclear steam supply system (NSSS) for each of the VEGP units is a pressurized water reactor designed and supplied by Westinghouse Electric Corporation with a licensed net core power output of 3625.6 MWt. Turbine generator output is approximately 1249.8 MWe.</p> <p>Section 4.3.1.6, page 4.3-9</p> <p>Replace the first paragraph with the following:</p> <p style="padding-left: 40px;">Full structural weld overlays have been installed on the Unit 1 and Unit 2 pressurizer spray nozzle, pressurizer safety and relief nozzles, and the pressurizer surge nozzle.</p> <p>Section 4.2, page 4.2-1</p> <p>Replace the last two paragraphs that begin, “For VEGP, 56 EFPY is sufficient...” with the following:</p> <p style="padding-left: 40px;">For VEGP, 55.3 EFPY is a sufficient (and conservative) basis to cover the current term and the period of extended operation. This equates to operating at greater than 99% capacity factor between 26 day outages every 18 months for the remainder of plant life (60 years). The End-Of-Life (EOL) basis for the Reactor Vessel Neutron Embrittlement analyses results in the following sections is 57 EFPY at the pre-MUR Uprate VEGP licensed power level. SNC has received a VEGP license amendment for a Measurement Uncertainty Recapture (MUR) Uprate. The MUR Uprate increases the VEGP licensed power level approximately 1.7%. The change was implemented on Unit 1 during the 2008 spring outage that ended April 24th and will be implemented on Unit 2 later in 2008. The impact of approval of the MUR Uprate on the Reactor Vessel Neutron Embrittlement analyses results for each unit is that the VEGP EOL basis for the analyses in LRA Section 4.2 becomes 56.3 EFPY at the MUR Uprate power level. In summary, the results for the Reactor Vessel Neutron Embrittlement analyses bound the projected 55.3 EFPY at EOL for an operating term of 60 years.</p> <p style="padding-left: 40px;">The 60-year capsule has been analyzed for Unit 1 with a fluence of 3.53×10^{19} n/cm² (E>1.0MeV), which exceeds the 3.20×10^{19} n/cm² (E>1.0MeV) fluence value in Table 4.2.1-1. However, for Unit 2, the 60-year capsule only has a fluence of 2.98×10^{19} n/cm² (E>1.0MeV), which is equivalent to 55.5 EFPY. For Unit 2, the applicability of the resultant curves and analyses in Section 4.2 is restricted to the limiting EFPY for the capsule data (55.5 EFPY). Operation above that fluence would require an update of the evaluation in accordance with Appendix G rules.</p> <p style="padding-left: 40px;">The calculations have been updated to address both the additional 20 years of operation and the MUR Uprate and they are addressed in the following sections:</p> <p>Section 4.2.1, page 4.2-2</p> <p>Replace the last two paragraphs with the following:</p> <p style="padding-left: 40px;"><u>Table 4.2.1-1</u> summarizes the Unit 1 and 2 beltline peak fluence values for EOL at the inner wall (surface), 1/4T and 3/4T locations (<u>Ref. 4</u>) for 57 EFPY before MUR Uprate or for 56.3 EFPY after MUR Uprate.</p>
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**Vogtle Electric Generating Plant Units 1 and 2
Application for License Renewal – Amendment 2
Changes Resulting from Annual Update and RAI Responses**

	<p>Table 4.2.1-2 summarizes the Unit 1 and 2 extended beltline peak fluence values for EOL at the inner wall (surface), 1/4T and 3/4T locations for 57 EFPY before MUR Uprate or for 56.3 EFPY after MUR Uprate. The fluence analysis of the upper shell and nozzles determined that these additional materials will exceed the 1×10^{17} n/cm² (E>1.0 MeV) threshold.</p>
<p>RAI s 4.2.1-04, 4.2.1-05, and B.3.25 and Annual Update</p>	<p>Section 4.2.2, page 4.2-3 Add the following as a 3rd paragraph: The calculations discussed above were performed before MUR Uprate assuming a conservative EOL of 57 EFPY. Implementation of the MUR Uprate reduces the EOL assumed in the calculations discussed above from 57 EFPY to 56.3 EFPY. Current projections indicate that actual EOL will be no more than 55.3 EFPY.</p> <p>Table 4.2.2-1, page 4.2-4 Change the Table title to “VEGP Unit 1 Predicted EOL USE Calculations For all the Beltline Region Materials For License Renewal^C”</p> <p>Table 4.2.2-1, page 4.2-5 Add the following as Note C at the bottom of the table: (C) Values calculated for 57EFPY Pre-MUR Uprate/56.3 EFPY with MUR Uprate. Actual EOL is projected to be 55.3 EFPY.</p> <p>Table 4.2.2-2, page 4.2-6 Change the Table title to “VEGP Unit 2 Predicted EOL USE Calculations For all the Beltline Region Materials For License Renewal^C”</p> <p>Table 4.2.2-2, page 4.2-7 Add the following as Note C at the bottom of the table: (C) Values calculated for 57EFPY Pre-MUR Uprate/56.3 EFPY with MUR Uprate. Actual EOL is projected to be 55.3 EFPY.</p> <p>Section 4.2.3, page 4.2-8 Add the following as a 3rd paragraph: The calculations discussed above were performed before MUR Uprate assuming a conservative EOL of 57 EFPY. Implementation of the MUR Uprate reduces the EOL assumed in the calculations discussed above from 57 EFPY to 56.3 EFPY. Current projections indicate that actual EOL will be no more than 55.3 EFPY. For comparison with the MUR Uprate WCAP-16736-P, Tables 4.2.3-3 and 4.2.3-4 are included to show the R_{PTS} values for the beltline materials on each unit at 57 EFPY after MUR Uprate. The fluence used in Table 4.2.3-3 is 3.24×10^{19} n/cm² (MeV > 1.0). The fluence used in Table 4.2.3-4 is 3.06×10^{19} n/cm² (MeV > 1.0).</p> <p>Table 4.2.3-1, page 4.2-10 Change Note A at the bottom of the table to read: (A) EOL Fluence (at the end of the period of extended operation) is conservatively assumed to be 3.20×10^{19} n/cm² E > 1.0 MeV for the beltline region and 8.92×10^{17} n/cm² E > 1.0 MeV for the extended beltline region. This EOL fluence is equivalent to 57 EFPY without MUR Uprate or 56.3 EFPY with MUR Uprate. Actual EOL fluence is projected to be equivalent to no more than 55.3 EFPY.</p>

**Vogtle Electric Generating Plant Units 1 and 2
Application for License Renewal – Amendment 2
Changes Resulting from Annual Update and RAI Responses**

<p>RAI s 4.2.1-04, 4.2.1-05, and B.3.25 and Annual Update</p>	<p>Table 4.2.3-2, page 4.2-12 Change Note A at the bottom of the table to read:</p> <p>(A) EOL Fluence (at the end of the period of extended operation) is conservatively assumed to be 3.02×10^{19} n/cm² E > 1.0 MeV for the beltline region and 7.61×10^{17} n/cm² E > 1.0 MeV for the extended beltline region. This EOL fluence is equivalent to 57 EFPY without MUR Uprate or 56.3 EFPY with MUR Uprate. Actual EOL fluence is projected to be equivalent to no more than 55.3 EFPY.</p> <p>Section 4.2.4, page 4.2-13 Add the following to the end of the section as a new paragraph:</p> <p>The calculations discussed above were performed before MUR Uprate assuming a conservative EOL of 57 EFPY. Implementation of the MUR Uprate reduces the EOL assumed in the calculations discussed above from 57 EFPY to 56.3 EFPY. Current projections indicate that actual EOL will be no more than 55.3 EFPY.</p> <p>Tables 4.2.3-3 and 4.2.3-4, page 4.2-13 Add Tables 4.2.3-3 and 4.2.3-4 as shown in the attachment after Table 4.2.3-2.</p> <p>Section 4.2.4, page 4.2-13 Add the following to the end of the section as a new paragraph:</p> <p>The calculations discussed above were performed before MUR Uprate assuming a conservative EOL of 57 EFPY. Implementation of the MUR Uprate reduces the EOL assumed in the calculations discussed above from 57 EFPY to 56.3 EFPY. Current projections indicate that actual EOL will be no more than 55.3 EFPY.</p>
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Vogtle Electric Generating Plant Units 1 and 2
Application for License Renewal – Attachment to Amendment 2
Changes Resulting from Annual Update and RAI Responses

Table 4.2.3-3 VEGP Unit 1 Values of RT_{PTS} at 57 EFPY after MUR Uprate ^(A)

Unit 1							
Material	RG 1.99 R2 Method	CF (°F)	FF ^(B)	ΔRT_{PTS} ^(C) (°F)	$IRT_{NDT(U)}$ ^(D) (°F)	Margin ^(E) (°F)	RT_{PTS} ^(F) (°F)
Intermediate Shell Plate B8805-1	Position 1.1	53.1	1.309	69.5	0	34	103.5
Intermediate Shell Plate B8805-2	Position 1.1	53.1	1.309	69.5	20	34	123.5
Intermediate Shell Plate B8805-3	Position 1.1	38.4	1.309	50.3	30	34	114.3
	Position 2.1	37.8	1.309	49.5	30	34 ^(G)	113.5
Lower Shell Plate B8606-1	Position 1.1	32.8	1.309	42.9	20	34	96.9
Lower Shell Plate B8606-2	Position 1.1	35.2	1.309	46.1	20	34	100.1
Lower Shell Plate B8606-3	Position 1.1	41.9	1.309	54.9	10	34	98.9
Inter. Shell Longitudinal Weld Seam 101-124A,B,C	Position 1.1	34.5	1.309	45.2	-80	45.2	10.4
	Position 2.1	20.8	1.309	27.2	-80	27.2	-25.6
Intermediate to Lower Shell Girth Weld Seam 101-171	Position 1.1	34.5	1.309	45.2	-80	45.2	10.4
	Position 2.1	20.8	1.309	27.2	-80	27.2	-25.6
Lower Shell Long. Weld Seams 101-142A,B,C	Position 1.1	34.5	1.309	45.2	-80	45.2	10.4
	Position 2.1	20.8	1.309	27.2	-80	27.2	-25.6

Notes:

- A. EOL Fluence (at the end of the period of extended operation) is conservatively assumed to be $3.24 \times 10^{19} \text{ n/cm}^2$ ($E > 1.0 \text{ MeV}$) for the beltline. This EOL fluence is equivalent to 57 EFPY with MUR Uprate. Actual EOL fluence is projected to be equivalent to no more than 55.3 EFPY.
- B. $FF = \text{fluence factor} = f^{(0.28 - 0.1 \log(f))}$
- C. $\Delta RT_{PTS} = CF * FF$
- D. Initial RT_{NDT} values are measured values
- E. $M = 2 * (\sigma_i^2 + \sigma_\Delta^2)^{1/2}$
- F. $RT_{PTS} = RT_{NDT(U)} + \Delta RT_{PTS} + \text{Margin (°F)}$

Vogtle Electric Generating Plant Units 1 and 2
Application for License Renewal – Attachment to Amendment 2
Changes Resulting from Annual Update and RAI Responses

Table 4.2.3-4 VEGP Unit 2 Values of RT_{PTS} at 57 EFPY after MUR Uprate ^(A)

Unit 2							
Material	RG 1.99 R2 Method	CF (°F)	FF ^(B)	ΔRT_{PTS} ^(C) (°F)	$IRT_{NDT(U)}$ ^(D) (°F)	Margin ^(E) (°F)	RT_{PTS} ^(F) (°F)
Intermediate Shell Plate R4-1	Position 1.1	44.0	1.295	57.0	10	34	101.0
Intermediate Shell Plate R4-2	Position 1.1	37.0	1.295	47.9	10	34	91.9
Intermediate Shell Plate R4-3	Position 1.1	31.0	1.295	40.1	30	34	104.1
Lower Shell Plate B8825-1	Position 1.1	37.0	1.295	47.9	40	34	121.9
Lower Shell Plate R8-1	Position 1.1	44.0	1.295	57.0	40	34	131.0
Lower Shell Plate B8628-1	Position 1.1	31.0	1.295	40.1	50	34	124.1
	Position 2.1	20.4	1.295	26.4	50	17	93.4
Inter. Shell Longitudinal Weld Seam 101-124A,B,C	Position 1.1	43.3	1.295	56.1	-10	56	102.1
	Position 2.1	21.5	1.295	27.8	-10	27.8	45.6
Intermediate to Lower Shell Girth Weld Seam 101-171	Position 1.1	43.3	1.295	56.1	-30	56	82.1
	Position 2.1	21.5	1.295	27.8	-30	27.8	25.6
Lower Shell Long. Weld Seam 101-142A,B,C	Position 1.1	43.3	1.295	56.1	-10	56	102.1
	Position 2.1	21.5	1.295	27.8	-10	27.8	45.6

Notes:

- G. EOL Fluence (at the end of the period of extended operation) is conservatively assumed to be 3.06×10^{19} n/cm² (E > 1.0 MeV) for the beltline. This EOL fluence is equivalent to 57 EFPY with MUR Uprate. Actual EOL fluence is projected to be equivalent to no more than 55.3 EFPY.
- H. FF = fluence factor = $f^{(0.28 - 0.1 \log(t))}$
- I. $\Delta RT_{PTS} = CF * FF$
- J. Initial RT_{NDT} values are measured values
- K. $M = 2 * (\sigma_i^2 + \sigma_\Delta^2)^{1/2}$
- L. $RT_{PTS} = RT_{NDT(U)} + \Delta RT_{PTS} + \text{Margin (°F)}$

**Vogtle Electric Generating Plant
License Renewal – LRA Annual Update**

Enclosure 2

Updated Future Action Commitment List

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
1	Implement the ACCW System Carbon Steel Components Program as described in VEGP LRA Section B.3.1.	A.2.1	Prior to the period of extended operation	B.3.1
2	Implement the Bolting Integrity Program as described in VEGP LRA Section B.3.2.	A.2.2	Prior to the period of extended operation	B.3.2
3	Enhance Boric Acid Corrosion Control Program documents to address the effects of borated water leakage onto materials other than steels, including electrical components (e.g., electrical connectors), that are susceptible to boric acid corrosion.	A.2.3	Prior to the period of extended operation	B.3.3
4	Implement the Buried Piping and Tanks Inspection Program as described in VEGP LRA Section B.3.4.	A.2.4	Prior to the period of extended operation	B.3.4
5	Implement the CASS RCS Fitting Evaluation Program as described in VEGP LRA Section B.3.5.	A.2.5	Prior to the period of extended operation	B.3.5

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
6	Enhance Closed Cooling Water Program documents to indicate the components in each system that are most susceptible to various corrosion mechanisms and to ensure that corrosion monitoring is appropriately accomplished. This qualitative assessment will be based on an understanding of corrosion principles associated with closed cooling water chemistries and on review of system, plant, and industry operating experience. Parameters considered in the review will include system flow parameters (focusing on identification of stagnant regions and on intermittently operated systems), normal operating temperatures, and component geometries (e.g. creviced areas).	A.2.6	Prior to the period of extended operation	B.3.6
7	Implement the External Surfaces Monitoring Program as described in VEGP LRA Section B.3.8.	A.2.8	Prior to the period of extended operation	B.3.8

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
8	<p>Implement the following enhancements to the Fire Protection Program:</p> <ul style="list-style-type: none"> • Wall thickness evaluations will be performed on water suppression piping systems using non-intrusive volumetric testing or visual inspections to ensure that wall thicknesses are within acceptable limits. Initial wall thickness evaluations will be performed before the end of the current operating term. Subsequent evaluations will be performed at plant specific intervals during the period of extended operation. The plant specific inspection intervals will be determined based on previous evaluations and site operating experience. • A sample of sprinkler heads will be inspected using the guidance of NFPA 25 "Inspection, Testing and Maintenance of Water-Based Fire Protection Systems" (1998 Edition), Section 2-3.1.1, or NFPA 25 (2002 Edition), Section 5.3.1.1.1. Where sprinkler heads have been in service for 50 years, they will be replaced or representative samples from one or more sample areas will be submitted to a recognized testing laboratory for field service testing. This sampling will be performed every 10 years after the initial field service testing. The 50 years of time in service begins when the system was placed in service, not when the plant became operational. • Fire Protection Program procedures will be revised to provide more detailed instructions for visual inspection of Fire Pump Diesel fuel supply lines for leakage, corrosion, and general degradation while the engine is running during fire suppression system pump tests. 	A.2.9	<p>Prior to the period of extended operation, except for sprinkler head replacement or testing;</p> <p>Sprinkler head replacement or testing will be implemented prior to 50 years from time system was placed in service.</p>	B.3.9
9	<p>Enhance the Flux Thimble Tube Inspection Program by preparing an overall program procedure documenting the Flux Thimble Tube Inspection Program administration and implementing activities credited for license renewal.</p>	A.2.11	<p>Prior to the period of extended operation</p>	B.3.11

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
11	<p>Implement the following enhancements to the Generic Letter 89-13 Program:</p> <ul style="list-style-type: none"> • Develop an overall program procedure for the Generic Letter 89-13 Program to describe the various program activities that comprise Generic Letter 89-13 Program and their implementing controls such as chemistry procedures, maintenance activities, scheduled surveillances, or other mechanisms. • Add inspection of the NSCW Transfer Pumps' casings and bolting. • Add the NSCW Cooling Tower spray nozzles as a specific item to be inspected during the cooling tower inspection. 	A.2.12	Prior to the period of extended operation	B.3.12
12	<p>Implement the Nickel Alloy Management Program for Non-Reactor Vessel Closure Head Penetration Locations as described in VEGP LRA Section B.3.14.</p> <p>The program will be based on the following commitments:</p> <ol style="list-style-type: none"> (1) SNC will continue to participate in industry initiatives directed at resolving PWSCC issues, such as owner's group programs and the Electric Power Research Institute Materials Reliability Program. This is an ongoing commitment. (2) SNC will comply with applicable NRC Orders. This is an ongoing commitment. (3) SNC will submit a program inspection plan for VEGP that includes implementation of applicable Bulletins, Generic Letters, and staff accepted industry guidance. The inspection plan will also include assessments of each of the ten aging management program elements defined in Section A.1.2.3 of NUREG-1800 Revision 1. The inspection plan will be submitted to the staff for review and approval not less than 24 months prior to entering the period of extended operation for VEGP Units 1 and 2. 	A.2.14	<p>Program implementation to be completed prior to the period of extended operation</p> <p>Numbered items are implemented as noted in the item.</p>	B.3.14

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
13	<p>The Nickel Alloy Management Program for Reactor Vessel Closure Head Penetrations will implement commitments for reactor vessel closure head penetrations associated with nickel alloys from:</p> <p>(1) NRC Orders, Bulletins, and Generic Letters, and;</p> <p>(2) Staff-accepted industry guidelines.</p>	A.2.15	Ongoing	B.3.15
14	<p>Implement the following enhancements to the Oil Analysis Program:</p> <ul style="list-style-type: none"> • An overall program procedure or guideline will be prepared to formalize the sampling and analysis activities performed. • Viscosity, relative level of oxidation, and flash point of lubricating oil samples will be determined for components where the lubricating oil is changed based on its analyzed condition (instead of being changed on a regular schedule regardless of condition). The relative level of oxidation of the lubricating oil will be monitored by analysis of the neutralization number or other appropriate parameter(s). Flash point monitoring will be performed for those components which have the potential for contamination of the lubricating oil with a light hydrocarbon such as fuel oil. • For both components with periodic lubricating oil changes and components where the lubricating oil is changed based on analyzed condition, if a lubricating oil sample exceeds the limits established for the wear metal content screening, the lubricating oil from that component will be subjected to additional testing. The additional testing may include detailed particle counting, elemental analysis, or analytical ferrography as necessary to validate the initial screening results and to diagnose the source of the particulates. 	A.2.16	Prior to the period of extended operation	B.3.16

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
15	Implement the One-Time Inspection Program as described in VEGP LRA Section B.3.17.	A.2.17	Inspections will be performed within a window of ten years immediately proceeding the period of extended operation.	B.3.17
16	Implement the One-Time Inspection Program for ASME Class 1 Small Bore Piping as described in VEGP LRA Section B.3.18.	A.2.18	Inspections will be performed within a window of ten years immediately proceeding the period of extended operation.	B.3.18
17	Implement the One-Time Inspection Program for Selective Leaching as described in VEGP LRA Section B.3.19.	A.2.19	Inspections will be performed within a window of ten years immediately proceeding the period of extended operation.	B.3.19

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
18	Enhance the Periodic Surveillance and Preventive Maintenance Activities to include the following: <ul style="list-style-type: none"> • Steam Generator Blowdown Secondary Sample Bath Shell inspections • Steam Generator Blowdown Corrosion Product Monitor cooler shell inspections • Potable Water System water heater housing inspections (for the in-scope water heaters) 	A.2.21	Prior to the period of extended operation	B.3.21
19	Implement the Piping and Duct Inspection Program as described in LRA Section B.3.22.	A.2.22	Prior to the period of extended operation	B.3.22

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
20	<p>Implement the Reactor Vessel Internals Program as described in LRA Section B.3.24.</p> <p>The program will be based on the following commitments:</p> <ol style="list-style-type: none"> (1) SNC will participate in the industry program for investigating and managing aging effects on reactor internals. This is an ongoing commitment. (2) SNC will evaluate and implement the results of the industry programs, such as the Electric Power Research Institute Material Reliability Program, as applicable to the VEGP reactor internals. This commitment will be fully implemented prior to the period of extended operation. (3) SNC will submit an inspection plan for the VEGP reactor internals to the NRC for review and approval not less than 24 months before entering the period of extended operation for VEGP Units 1 and 2. This inspection plan will address the bases, inspection methods, and acceptance criteria associated with aging management of the reactor vessel thermal sleeves and the core support lugs (along with the associated support pads and attachment welds). 	A.2.24	<p>Program implementation to be completed prior to the period of extended operation;</p> <p>Numbered items are implemented as noted in the item.</p>	B.3.24

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
21	Implement the following enhancements to the Reactor Vessel Surveillance Program: (1) Prior to completion of testing of the last surveillance capsule in each unit, action will be taken to ensure that tested and untested specimens from all capsules removed from the VEGP reactor vessels remain in storage. (2) Alternate dosimetry will be installed to monitor neutron fluence on the reactor vessel after removal of the last surveillance capsule in that unit. This enhancement will be implemented prior to removal of the last surveillance capsule in each unit.	A.2.25	As noted in the numbered items	B.3.25
23	Implement the following enhancements to the Structural Monitoring Program: <ul style="list-style-type: none"> • The scope of the Structural Monitoring Program will be expanded to include the additional structures that require monitoring for license renewal. • The scope of inspection for structures that require monitoring for license renewal will be clarified. An area-based inspection will be performed unless a detailed inspection scope is provided. • The Structural Monitoring Program scope for hangers and supports will be clarified. • Program requirements will be revised to include periodic ground water monitoring to confirm that groundwater chemistry remains non-aggressive as defined in NUREG 1801. • Underwater inspection of the NSCW cooling tower basins, including appropriate inspection and acceptance criteria, will be added to the Structural Monitoring Program. 	A.2.32	Prior to the period of extended operation	B.3.32

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
24	Enhance the Structural Monitoring Program - Masonry Walls to include monitoring of masonry walls in the structures that are in scope for license renewal, but are not currently monitored under the program.	A.2.33	Prior to the period of extended operation	B.3.33
25	Implement the Non-EQ Cables and Connections Program as described in LRA Section B.3.34.	A.2.34	Implement program and complete first inspection prior to the period of extended operation	B.3.34
26	Implement the Non-EQ Inaccessible Medium-Voltage Cables Program as described in LRA Section B.3.35.	A.2.35	Implement program and complete first inspection prior to the period of extended operation	B.3.35

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
27	Implement the Non-EQ Cable Connections One-Time Inspection Program as described in LRA Section B.3.36.	A.2.36	Inspections will be performed within a window of five years immediately preceding the period of extended operation.	B.3.36
28	<p>Implement the following enhancements to the Fatigue Monitoring Program:</p> <ul style="list-style-type: none"> • Implementing documents will be revised to address the effect of the full structural weld overlays applied to the pressurizer spray and surge nozzles on the stress-based module calculation of CUF. • The VEGP UFSAR will be revised to require fatigue monitoring of the Accumulator/RHR nozzles and pressurizer heater penetrations. • Implementing documents will be revised to reduce acceptable CUF values to account for environmental fatigue effects for those NUREG-6260 locations monitored for fatigue. • The implementing procedure for the Fatigue Monitoring Program will be enhanced to explicitly require that the corrective action initiated for exceeding the acceptance criteria of a CUF less than or equal to 1.0 includes a review to identify and assess any additional affected reactor coolant pressure boundary locations. 	A.2.38	No later than two years prior to the period of extended operation	B.3.38

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
29	To ensure that the fatigue cycle limits are not exceeded, SNC will replace the steam generator secondary side handhole bolts after 30 years of service. The handhole bolts have been previously replaced and are scheduled to be replaced again during the spring outages in 2026 and 2028 for Units 1 and 2, respectively. Alternatively, a less restrictive replacement schedule may be developed and documented based on potential updated analyses initiated by the Bolting Integrity Program.	A.3.2.5	As stated in the commitment	4.3.5 B.3.2
30	To ensure that the fatigue cycle limits are not exceeded, SNC will replace the steam generator secondary side manway bolts after 30 years of service. The manway bolts have never been replaced and are scheduled for replacement during the spring outages in 2017 and 2019 for Units 1 and 2, respectively. Alternatively, a less restrictive replacement schedule may be developed and documented based on potential updated analyses initiated by the Bolting Integrity Program.	A.3.2.5	As stated in the commitment	4.3.5 B.3.2
31	The VEGP Pressure-Temperature Limits Report (for each unit) will be updated to address neutron embrittlement for a 60-year operating life, including any changes to the cold-overpressure mitigation system setpoints.	A.3.1.5 A.3.6.4	Prior to the unit entering the period of extended operation	4.2.5 4.7.4

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
32	Implement a replacement schedule for the small diameter (≤ 2 -inch) flexible hoses described below: <ul style="list-style-type: none"> • Radiation Monitoring System flexible hoses associated with the vent stack radiation monitor sample line. • Emergency Diesel Generator System flexible hoses associated with the fuel oil supply lines from the fuel oil headers to the fuel injector pumps. • ACCW System flexible hoses associated with the normal charging pump motor coolers. • Hydrogen Recombiner and Monitoring System flexible hoses associated with the calibration gas and oxygen bottles. • Main Steam System flexible hoses between the ARV hydraulic actuator and the hand pump unit. • Drain System flexible hoses installed on the Containment Bldg Tendon Gallery Sump Pump discharge lines. • Fire Protection System flexible hoses associated with the fire pump diesel fuel oil system. 	None	Prior to the period of extended operation	2.3.3.25 2.3.3.20 2.3.3.6 2.3.3.20 2.3.4.1 2.3.3.23 2.3.3.19
33	Ensure the fatigue monitoring limits implemented as part of the Fatigue Monitoring Program are adequate to ensure that charging and letdown intermediate break location CUF values remain less than 0.1 for 60 years of operation.	A.3.2.1	No later than two years prior to the period of extended operation	4.3.1.7

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
34	<p>The cranes within the scope of the Overhead and Refueling Crane Inspection Program are routinely inspected; however the existing procedures do not explicitly identify inspection of structural components for excessive wear, corrosion, and misalignment in all cases. As a result, SNC will enhance applicable plant procedures to explicitly identify inspection of crane rails and crane structural components for loss of material due to corrosion and wear, and for indication of rail misalignment:</p> <ul style="list-style-type: none"> a) Procedure 93246-C "Polar Crane" will be enhanced to include inspection of crane rails and crane structural components (e.g., bridge) for loss of material due to corrosion; inspection of crane rails for loss of material due to wear, and for indication of rail misalignment. b) Procedure 27315-C "Spent Fuel Cask Crane" will be enhanced to include inspection of crane rails for loss of material due to corrosion. c) Procedure 27340-C "Refueling Machine" will be enhanced to include inspection of crane rails and crane structural components (e.g., bridge) for loss of material due to corrosion, and for indication of rail misalignment. d) Procedure 27342-C "Fuel Handling Machine Bridge Crane" will be enhanced to include inspection of crane rails and crane structural components (e.g., bridge) for loss of material due to corrosion; inspection of crane rails for loss of material due to wear, and for indication of rail misalignment. 	A.2.20	Prior to the period of extended operation	B.3.20
35	<p>This is a new commitment in response to Audit Question 4.3-14. SNC will revise the FatiguePro software to calculate a minimum projected value of 1 for any events that may potentially occur,</p>	New Commitment	No later than two years prior to the period of extended operation	

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
36	This is a new commitment in response to Audit Question 4.7-01. SNC will verify the LBB evaluation in WCAP-10551-P, Addendum 1 meets the conditions of that process or have it re-performed using the acceptable process.	New Commitment	No later than two years prior to the period of extended operation	4.7.1
37	This is a new commitment in response to Audit Question B.3.28-04. To ensure the Boral spent fuel racks will continue to perform their intended function during the period of extended operation, VEGP will monitor spent fuel pool aluminum concentrations and implement corrective actions if adverse trends are identified. Additionally, SNC will monitor industry experience related to Boral and will take appropriate actions if significant degradation of Boral is identified.	New Commitment	Prior to the period of extended operation	B.3.28
38	This is a new commitment in response to RAI 4.3-2. SNC commits to revise the FatiguePro initial CUF values for the Unit 1 and Unit 2 hot leg surge nozzles, pressurizer surge nozzles, and pressurizer heater penetrations to double the current values and recalculate the current and projected CUFs.	New Commitment	No later than two years prior to entering the period of extended operation.	4.3.1.5

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
39	<p>This is a new commitment in response to RAI 4.3-04.</p> <p>SNC commits to implement a fatigue management software program that uses six stress components in the stress based fatigue calculation. The software will be appropriately benchmarked against an ASME NB-3200 fatigue analysis and the stress based fatigue monitoring locations will be modeled with the as-built configuration. The new software will be used to re-project 60-year CUF values for the monitored locations. When those locations were evaluated for environmental effects on fatigue, the new software will also be used to demonstrate the environmental effects on fatigue will be adequately managed for those locations during the period of extended operation. This software will be put in service at least two years prior to the period of extended operation.</p>	New Commitment	No later than two years prior to entering the period of extended operation.	
40	<p>This is a new commitment in response to a question raised during the IP-71002 inspection.</p> <p>The following changes will be made to the Structural Monitoring Program in order to enhance evaluation and trending of findings:</p> <ol style="list-style-type: none"> 1) Guidance will be given regarding proper documentation of condition adverse to quality and its probable causes for any CR written against a finding during structural monitoring program walkdown. 2) For any finding (e.g., crack, leakage, etc.) guidance will be given for data to be collected and evaluated. 3) More explicit direction will be given for trending of the problems. 	New Commitment	No later than two years prior to the period of extended operation	B.3.32

VEGP License Renewal Future Action Commitment List				
ITEM NO.	COMMITMENT	UFSAR SUPPLEMENT LOCATION	SCHEDULE	RELATED LRA SECTIONS/ REFS
41	<p>This is a new commitment in response to a question raised during the IP-71002 inspection.</p> <p>The following changes will be made to the IWE and IWL programs in order to enhance evaluation and trending of findings:</p> <p>1) More explicit direction will be given to the Registered Professional Engineer for trending and evaluating conditions (including evidence of tendon grease leakage) identified during concrete visual examinations.</p>	New Commitment	No later than two years prior to the period of extended operation	B.3.30 B.3.31