

Tom Tynan
Vice President - Vogtle

**Southern Nuclear
Operating Company, Inc.**
7821 River Road
Waynesboro, Georgia 30830

Tel 706.826.3151
Fax 706.826.3321



Energy to Serve Your World™

June 27, 2008

Docket Nos.: 50-424
50-425

NL-08-0869

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

Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion

Ladies and Gentlemen:

Pursuant to 10 CFR 50.90, SNC hereby requests an amendment to Facility Operating License Nos. NPF-68 and NPF-81 for Vogtle Electric Generating Plant (VEGP), Units 1 and 2, respectively. This amendment proposes to revise Vogtle Electric Generating Plant (VEGP) Technical Specification (TS) 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10, "Steam Generator Tube Inspection Report," to incorporate a one cycle interim alternate repair criterion (IARC) in the provisions for SG tube repair criteria during Refueling Outage 2R13 (Unit 2) and the subsequent operating cycle.

This license amendment request (LAR) is based upon a similar one cycle request submitted by SNC for VEGP Units 1 and 2, dated February 13, 2008, as supplemented by SNC letters dated March 21, 2008 and April 3, 2008. The NRC approved the SNC LAR in the NRC letter, "Vogtle Electric Generating Plant, Units 1 and 2, Issuance of Amendments Regarding Changes to Technical Specification (TS) Sections TS 5.5.9, 'Steam Generator (SG) Program' and TS 5.6.10. 'Steam Generator Tube Inspection Report' (TAC Nos. MD7450 and MD7451)," dated April 9, 2008. The approved license amendment was implemented for VEGP Unit 1 to use during the spring 2008 maintenance/refueling outage (1R14) and the subsequent operating cycle only. Wolf Creek and Braidwood 1 and 2 also submitted similar one cycle requests dated February 8, 2008 and February 25, 2008, respectively. As part of their review of the three submittals, the NRC issued requests for additional information (RAIs) which included, in total, 17 questions. The utilities drafted the responses to Questions 1 through 5, and Westinghouse developed responses to Questions 6 through 17. These RAI responses have been incorporated in this SNC LAR. This LAR adds the Vogtle Unit 2 fall 2008 refueling outage (2R13), and the Unit 2 subsequent operating cycle, to the scope of Amendment Nos. 150 (Unit 1) and 130 (Unit 2) approved by the NRC letter dated April 9, 2008.

The attached amendment request is subdivided as shown below:

Enclosure 1 provides a basis for the proposed change.

Enclosure 2 includes the marked-up TS pages with the proposed changes.

Enclosure 3 includes the associated typed TS pages with the proposed changes incorporated for VEGP.

Enclosure 4 provides an application for withholding, affidavit, proprietary information notice, and copyright notice for information proprietary to Westinghouse Electric Company, LLC.

Enclosure 5 provides a non-proprietary version of Westinghouse Electric Company LLC, LTR-CDME 08-11-NP, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," Non-Proprietary Version.

Enclosure 6 provides a proprietary version of Westinghouse Electric Company LLC, LTR-CDME 08-11-P, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," Proprietary Version.

Enclosure 7 provides an application for withholding, affidavit, proprietary information notice, and copyright notice for information proprietary to Westinghouse Electric Company, LLC.

Enclosure 8 contains the Westinghouse Electric Company LLC LTR-CDME-08-043 NP-Attachment, "Response to NRC Request for Additional Information Relating to LTR-CDME-08-11 NP-Attachment," that provides non-proprietary information in response to RAI questions 6 through 17.

Enclosure 9 contains the proprietary Westinghouse Electric Company LLC LTR-CDME-08-043 P-Attachment, "Response to NRC Request for Additional Information Relating to LTR-CDME-08-11 P-Attachment," that provides proprietary information in response to RAI questions 6 through 17.

Enclosure 10 provides correction of references written into Section 5 text, GP-18283, "Transmittal of Document – LTR-CDME-08-25, 'Errata for LTR-CDME-08-11; Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone.' "

The NRC regulatory commitments contained in this letter are provided as a table in Enclosure 11.

Enclosures 6 and 9 contain information proprietary to Westinghouse Electric Company LLC; the documents are supported by an affidavits signed by Westinghouse, the owner of the information.

The affidavits set forth the basis on which the information may be withheld from public disclosure by the NRC and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Accordingly, it is respectfully requested that the information, which is proprietary to Westinghouse, be withheld from public disclosure in accordance with 2.390 of the Commission's regulations. These affidavits, along with Westinghouse authorization letters CAW-08-2449, "Application for Withholding Proprietary Information from Public Disclosure," and CAW-08-2448, "Application for Withholding Proprietary Information from Public Disclosure," are contained in Enclosures 4 and 7, respectively.

SNC requests approval of the proposed license amendments by September 5, 2008 in order to support the VEGP Unit 2 refueling outage that is currently scheduled to begin September 14, 2008. Excessive plugging increases Reactor Coolant System (RCS) flow resistance through the SG and reduces heat transfer area, thereby reducing margins in RCS flow and in SG tubing secondary side Departure from Nucleate Boiling (DNB), respectively. In addition, personnel responsible for the tube plugging activities will not be subject to additional radiation dose by having to unnecessarily plug SG tubes.

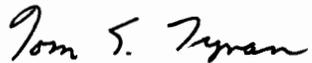
The proposed changes shall be implemented in the interval between the conclusion of Unit 2 Cycle 13 and the first Mode 4 entry in the mode ascension during the 2R13 Refueling Outage.

Mr. Tom 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.

If you have any questions, please advise.

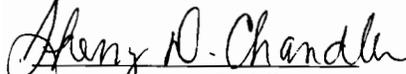
Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



Tom E. Tynan
Vice President -Vogtle

Sworn to and subscribed before me this 27 day of June, 2008.



Notary Public

Notary Public, Burke County, Georgia
My commission expires: January 13, 2012

TET/DRG/daj

- Enclosures:
1. Basis for Proposed Change
 2. Markup of Proposed Technical Specifications
 3. Typed Pages for Technical Specification
 4. Westinghouse Letter, CAW-08-2449, Application for Withholding and Affidavit, Proprietary Information Notice, and Copyright Notice
 5. Westinghouse Electric Company LLC, LTR-CDME 08-11-NP, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," dated January 31, 2008 (Non-Proprietary)
 6. Westinghouse Electric Company LLC, LTR-CDME 08-11-P, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," dated January 31, 2008 (Proprietary)
 7. Westinghouse Letter, CAW-08-2448, Application for Withholding and Affidavit, Proprietary Information Notice, and Copyright Notice
 8. Westinghouse Electric Company LLC, LTR-CDME-08-043 NP-Attachment, "Response to NRC Request for Additional Information Relating to LTR-CDME-08-11 NP-Attachment," dated March 18, 2008
 9. Westinghouse Electric Company LLC, LTR-CDME-08-43 P-Attachment, "Response to NRC Request for Additional Information Relating to LTR-CDME-08-11 P-Attachment," dated March 18, 2008
 10. GP-18283, "Transmittal of Document – LTR-CDME-08-25, 'Errata for LTR-CDME-08-11; Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone,' " dated February 12, 2008
 11. List of Regulatory Commitments

U. S. Nuclear Regulatory Commission

NL-08-0869

Page 5

cc: Southern Nuclear Operating Company

Mr. J. T. Gasser, Executive Vice President

Mr. L. M. Stinson, Vice President – Fleet Operations Support

Mr. D. H. Jones, Vice President – Engineering

RType: CVC7000

U. S. Nuclear Regulatory Commission

Mr. L. A. Reyes, Regional Administrator

Mr. R. A. Jervy, NRR Project Manager – Vogtle

Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

State of Georgia

Mr. N. Holcomb, Commissioner – Department of Natural Resources

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 1

Basis for Proposed Change

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, “Steam Generator (SG) Program” and TS 5.6.10,
“Steam Generator Tube Inspection Report” for Interim Alternate Repair Criterion**

Enclosure 1

Basis for the Proposed Change

Table of Contents

| | |
|-----|--------------------------------------|
| 1.0 | Summary Description |
| 2.0 | Detailed Description |
| 3.0 | Background |
| 4.0 | Technical Evaluation |
| 5.0 | Regulatory Evaluation |
| 5.1 | No Significant Hazards Consideration |
| 5.2 | Applicable Regulatory Requirements |
| 5.3 | Precedent |
| 5.4 | Conclusion |
| 6.0 | Environmental Considerations |
| 7.0 | References |

Enclosure 1
Basis for Proposed Change

1.0 Summary Description

This amendment application proposes a one time steam generator (SG) tubing eddy current inspection interval revision to the Vogtle Electric Generating Plant (VEGP) Technical Specifications (TS) 5.5.9, "Steam Generator (SG) Program," to incorporate an interim alternate repair criterion in the provisions for SG tube repair criteria during the Unit 2 inspection performed in Refueling Outage 13 and subsequent operating cycle. This amendment application requests approval of an interim alternate repair criterion (IARC) that requires full-length inspection of the tubes within the tubesheet but does not require plugging tubes if any axial or circumferential cracking observed in the region greater than 17 inches below the top of the tubesheet (TTS) is less than a value sufficient to permit the remaining circumferential ligament to transmit the limiting axial loads. This amendment application is required to preclude unnecessary plugging while still maintaining structural and leakage integrity.

Approval of this amendment application is requested to support VEGP 2 Refueling Outage 13 (fall 2008) and the subsequent operating cycle, since the existing one cycle amendment expires at the end of the current operating cycle.

2.0 Detailed Description

Proposed Changes to Current TS

The first paragraph of TS 5.5.9.c.3. currently states:

"For Unit 1 during Refueling Outage 14 and the subsequent operating cycle, tubes with flaws having a circumferential component less than or equal to 203 degrees found in the portion of the tube below 17 inches from the top of the tubesheet and above 1 inch from the bottom of the tubesheet do not require plugging. Tubes with flaws having a circumferential component greater than 203 degrees found in the portion of the tube below 17 inches from the top of the tubesheet and above 1 inch from the bottom of the tubesheet shall be removed from service."

This criterion would be revised as follows, as noted in italic type:

"For Unit 1 during Refueling Outage 14 and the subsequent operating cycle *and for Unit 2 during Refueling Outage 13 and the subsequent operating cycle*, tubes with flaws having a circumferential component less than or equal to 203 degrees found in the portion of the tube below 17 inches from the top of the tubesheet and above 1 inch from the bottom of the tubesheet do not require plugging. Tubes with flaws having a circumferential component greater than 203 degrees found in the portion of the tube below 17 inches from the top of the tubesheet and above 1 inch from the bottom of the tubesheet shall be removed from service."

TS 5.6.10 h., 5.6.10 i., and 5.6.10 j. currently state:

- h. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle), the number of indications and location, size, orientation, and whether initiated on primary or secondary side for each service-induced crack-like flaw within the thickness of the tubesheet, and the total of the circumferential components and any circumferential

Enclosure 1
Basis for Proposed Change

overlap below 17 inches from the top of the tubesheet as determined in accordance with TS 5.5.9.c.3;

- i. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle), the primary to secondary LEAKAGE rate observed in each SG (if it is not practical to assign leakage to an individual SG, the entire primary to secondary LEAKAGE should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report; and
- j. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle), the calculated accident leakage rate from the portion of the tube below 17 inches from the top of the tubesheet for the most limiting accident in the most limiting SG.

TS 5.6.10 h., 5.6.10 i., and 5.6.10 j. would be revised as follows, as noted in italic type:

- h. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle) *and following completion of a Unit 2 inspection performed in Refueling Outage 13 (and any inspections performed in the subsequent operating cycle)*, the number of indications and location, size, orientation, whether initiated on primary or secondary side for each service-induced flaw within the thickness of the tubesheet, and the total of the circumferential components and any circumferential overlap below 17 inches from the top of the tubesheet as determined in accordance with TS 5.5.9.c.3;
- i. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle) *and following completion of a Unit 2 inspection performed in Refueling Outage 13 (and any inspections performed in the subsequent operating cycle)*, the primary to secondary LEAKAGE rate observed in each SG (if it is not practical to assign leakage to an individual SG, the entire primary to secondary LEAKAGE should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report; and
- j. Following completion of a Unit 1 inspection performed in Refueling Outage 14 (and any inspections performed in the subsequent operating cycle) *and following completion of a Unit 2 inspection performed in Refueling Outage 13 (and any inspections performed in the subsequent operating cycle)*, the calculated accident leakage rate from the portion of the tube below 17 inches from the top of the tubesheet for the most limiting accident in the most limiting SG.

3.0 Background

TS 5.5.9 requires that an SG tube program be established and implemented to ensure that SG tube integrity is maintained. SG tube integrity is maintained by meeting specified performance criteria (in TS 5.5.9.b) for structural and leakage integrity, consistent with the plant design and licensing bases. TS 5.5.9 requires a condition monitoring assessment be performed during each outage during which the SG tubes are inspected to confirm that the performance criteria are being met. TS 5.5.9 also includes provisions regarding the scope, frequency, and methods of SG tube inspections. Of relevance to the amendment application, these provisions require

Enclosure 1
Basis for Proposed Change

that the number and portions of tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type that may be present along the length of a tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The applicable tube repair criteria, specified in TS 5.5.9.c, are that tubes found by an inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

On November 30, 2007, Southern Nuclear Operating Company (SNC) submitted to the NRC a LAR (Reference 2) to propose a permanent alternate repair criterion (ARC) to TS 5.5.9 to limit the inspection depth in the SG tube expansion zone, known as H*/B*. The SNC submittal was similar to the February 21, 2006 Wolf Creek Nuclear Operating Corporation (WCNOC) proposed amendment request to allow a permanent ARC. The H*/B* ARC seeks to minimize the depth of rotating coil inspection of the SG tubes within the tubesheet. The premise of H*/B* is that the expansion joint provides sufficient structural restraint to prevent the tube from pulling out of the tubesheet under normal operating and accident conditions, and that the accident induced leakage during accident conditions is bounded by a factor of two on the observed normal operating leakage. The H*/B* approach remains a valid approach for addressing degradation in the lower portion of the tube.

On December 21, 2007, NRC Division of Operating Reactor Licensing personnel contacted WCNOC executive management to communicate that the NRC would not be able to approve the proposed permanent revision to TS 5.5.9 to support the Spring 2008 refueling outage (March 2008). As a result of the December 21, 2007 communication, a subsequent teleconference was held on January 3, 2008, between the NRC, industry representatives, and involved utility representatives, in which the NRC stated that they would consider a proposed interim submittal to support the tube sheet ARC for plants with hydraulically expanded Alloy 600 thermally treated tubing in the tubesheet. The teleconference is documented by a January 22, 2008 memorandum (Reference 9).

SNC submitted a one cycle request for VEGP Units 1 and 2, dated February 13, 2008, as supplemented by SNC letters dated March 21, 2008 and April 8, 2008. The NRC approved the SNC LAR by letter dated April 9, 2008, "Vogtle Electric Generating Plant, Units 1 and 2, Issuance of Amendments Regarding Changes to Technical Specification (TS) Sections TS 5.5.9, 'Steam Generator (SG) Program' and TS 5.6.10. 'Steam Generator Tube Inspection Report' (TAC Nos. MD7450 and MD7451)" (Reference 13). The approved license amendment was implemented for VEGP Unit 1 to use during the spring 2008 maintenance/refueling outage (1R14) and the subsequent operating cycle only. Wolf Creek and Braidwood 1 and 2 also submitted similar one cycle requests dated February 8, 2008 and February 25, 2008, respectively. As part of their review of the three submittals, the NRC issued requests for additional information (RAIs) which included, in aggregate, 17 questions. The utilities drafted the responses to Questions 1 through 5 and Westinghouse developed responses to Questions 6 through 17 (Refer to Reference 11). These RAI responses have been incorporated in this SNC license amendment request.

Westinghouse Electric Company LLC, LTR-CDME 08-11-P, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," (Reference 3) provides the technical justification for an interim alternate repair criterion (IARC) that requires full-length inspection of the tubes within the tubesheet but does not require plugging tubes if the extent of any circumferential cracking observed in the region greater than 17 inches below the top of the tubesheet (TTS) is less than a value sufficient to permit the remaining circumferential ligament to transmit the limiting axial loads [the greater of 3 times the normal operating (NOP) or

Enclosure 1 Basis for Proposed Change

1.4 times the steam line break (SLB) end cap loads. Axial cracks below 17 inches from the TTS are not relevant to the tube pullout arguments, because axial cracks do not degrade the axial load carrying capability of the tube. Axial cracks do not require tube plugging, if they are below 17 inches from the top of the tubesheet.

The calculation of the limiting circumferential ligament has been defined. The calculation assumes that friction loads between the tube and tubesheet from any source are zero. This assumption avoids potential effects of uncertainties in tube and tubesheet material properties.

Also, based on the same assumption that the contact pressure between the tube and the tubesheet from any source is zero, this evaluation provides a basis for demonstrating that the accident induced leakage will always meet the value assumed in the plant's safety analysis if the observed leakage during normal operating conditions is within its allowable limits. The need to calculate leakage from individual cracks is avoided by the calculation of the ratio of accident induced leakage to normal operating leakage.

4.0 Technical Evaluation

An evaluation has been performed in References 3 and 11 to assess the need for removing tubes from service due to the occurrence of circumferentially or axially oriented cracks in a tubesheet. The conclusions of the evaluation are primarily fourfold:

1. Axial cracks in tubes below a distance of 17 inches below the top of the tubesheet can remain in service in the VEGP SGs, as they are not a concern relative to tube pullout and leakage capability.
2. The circumferential components of multiple flaws within 1 inch of each other axially will be combined. When the circumferential components of each of the flaws are added, it is acceptable to count the overlapped portions only once in the total of circumferential components.
3. Circumferentially oriented cracks in tubes with an azimuthal extent of less than or equal to 203 degrees can remain in service for one cycle of operation (18-month SG tubing eddy current inspection interval).
4. Circumferentially oriented cracks in the bottom 1-inch of the tube or in the tube-to-tubesheet welds with an azimuthal extent of less than or equal to 94 degrees are allowed to remain in service for one cycle of operation (18-month SG tubing eddy current inspection interval).

A bounding analysis approach is utilized for both the minimum ligament calculation and leakage ratio calculation. "Bounding" means that the most challenging conditions from the plants with hydraulically expanded Alloy 600TT tubing are used. Three different tube diameters are represented by the affected plants (11/16" dia., Model F; 3/4" dia., Model D5; 7/8" dia., Model 44F). The most limiting conditions for structural evaluation depend on tube geometry and applied normal operating loads; thus, the conditions from the plant that result in the highest stress in the tube are used to define the minimum required circumferential ligament. The limiting leak rate ratio depends on the leak rate values assumed in the safety analysis and allowable normal operating leakage that results in the longest length of undegraded tube.

Enclosure 1
Basis for Proposed Change

The requirements proposed in this LAR are structured in consideration of unit specific factors. Stress corrosion crack (SCC) indications have been detected in all 4 VEGP Unit 1 SGs; therefore, SG tubing eddy current inspection in all 4 SGs is required each refueling outage (18-month cycle). No SCC has been detected in the VEGP Unit 2 SGs; therefore, the current SG tubing eddy current inspection strategy in the VEGP Unit 2 SGs can be continued, in which 2 SGs are inspected in a given outage and the other 2 SGs are inspected in the subsequent outage.

Discussion of Performance Criteria

The performance criteria of NEI 97-06, Rev. 2 (Reference 5) are the basis for these analyses. The performance criteria in the VEGP TS, which are based on NEI 97-06, Rev. 2, are:

The structural integrity performance criterion is:

All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

The structural performance criterion is based on ensuring that there is reasonable assurance that a steam generator tube will not burst during normal operation or postulated accident conditions.

The accident-induced leakage performance criterion is:

The primary to secondary accident induced leakage rate for any design basis accident, other than a steam generator tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all steam generators and leakage rate for an individual steam generator. Leakage is not to exceed 1 gpm per steam generator.

Primary-to-secondary leakage is a factor in the dose releases outside containment resulting from a limiting design basis accident. The radiological dose consequences due to potential primary-to-secondary leak rate during postulated design basis accidents shall not exceed the offsite radiological dose consequences required by 10 CFR Part 100 guidelines or the radiological consequences to control room personnel required by GDC-19, or other NRC-approved licensing basis.

Enclosure 1
Basis for Proposed Change

The IARC for the tubesheet region are designed to meet these criteria. The structural criterion regarding tube burst is inherently satisfied because the constraint provided by the tubesheet to the tube prohibits burst.

Limiting Structural Ligament Discussion

As defined in References 3 and 11, the bounding remaining structural ligament which meets the NEI 97-06, Rev. 2, Performance Criterion described above and required for the tube to transmit the operational loads is 126 degrees arc. This assumes that the residual ligament is 100% of the tube wall in depth. A small circumferential initiating crack is predicted to grow to a through-wall condition before it is predicted to reach a limiting residual ligament. A residual ligament in a part-through-wall condition is not a significant concern, because of the assumption that all circumferential cracks detected are 100% through-wall.

Consideration of NDE Uncertainty

The NDE uncertainty must be addressed to assure that the as-indicated circumferential arc of the reported crack is a reliable estimate of the actual crack. Examination Technique Specification Sheet (ETSS) 20510.1 (Reference 6) describes the qualified technique used to detect circumferential PWSCC in the expansion transitions and in the tubesheet expansion zone (TEZ). The qualification data is provided in the ETSS.

The fundamental assumption for the IARC is that all circumferential cracks detected are 100% through-wall. Thus, even a shallow crack of small length will be considered to be through-wall. Further, tube burst is not an issue for the IARC because of the constraint provided by the tubesheet; rather, it is axial separation of the tube that is the principal concern. Assuming that all circumferential cracks are through-wall reduces the inspection uncertainty to length of the cracks only. Further, the accuracy of the length determination is an issue only when the indicated crack approaches the allowable crack length (the complement of the required residual ligament) and if the indicated crack length is a reasonable estimate of the structural condition of the tube. (Refer to Figure 5-1 in Enclosure 6)

Prior investigations have correlated the axial strength of the tube to the Percent Degraded Area (PDA) of the flaw (Reference 7). PDA takes into account the profile of the existing crack, including non-through-wall portions and shallow tails of the crack. Using the data from ETSS 20510.1 for cracks with a 90%, or greater, through-wall condition from both NDE and destructive examination, a comparison of the actual crack lengths and corresponding PDA for the cracks to a theoretical PDA, which assumes that cracks are 100% through-wall, has been made. All of the points with a PDA of 60% or greater fall below the theoretical PDA line. As the crack lengths increase, the separation of the actual PDA from the theoretical PDA tends to increase.

The conclusion that the as-indicated crack angle is conservative is further supported by considering the characteristics of the eddy current (EC) probes. Each probe has a "field of view," that is, a window of finite dimension in which it detects flaws. The field of view for the + Point probe typically varies between 0.1 inch to 0.2 inch depending on the specific characteristics of the probe. Therefore, as the probe traverses its path, a flaw will be detected as the leading edge of the field of view first crosses the location of the flaw, continuing until the trailing edge of the field of view passes the opposite end of the flaw. This is known as "lead-in" and "lead-out" of the probe, and the effect of these are to render the indicated flaw length greater than the actual flaw length. Therefore, it is concluded that the indicated flaw length will

Enclosure 1
Basis for Proposed Change

be conservative relative to the actual flaw length, especially when it is assumed that the entire length of the indicated flaw is 100% through-wall.

Based on the above, it is concluded that if the detected circumferential cracks are assumed to be 100% through-wall, the as-indicated crack lengths will be inherently conservative with respect to the structural adequacy of the remaining ligament. Therefore, no additional uncertainty factor is necessary to be applied to the as-measured circumferential extent of the cracks.

Consideration of Crack Growth

The growth of cracks due to PWSCC in this submittal request is dictated by four default growth rates from Reference 3. The distribution of growth rates is assumed to be lognormal. Typical values and conservative values are given, although it is recommended in EPRI 1012987; "Steam Generator Integrity Assessment Guidelines," dated July 2006 (Reference 8), to use the default values only when the historical information is not available and not to use the typical values unless the degradation is mild. (No significant crack growth data exists for the circumferential cracking in the tubesheet expansion region.) Both data sets provided in Reference 3 have mean values and 95% upper bound values. For this analysis, the typical 95% upper bound growth rate is used.

The circumferential growth rates are expressed as inches per effective full power year (EFPY).

**Table 1.0 Calculation of Required Minimum Ligament for
18 Months Operating Period**

| | Bounding Structural Ligament | EFPY (1) | Growth (In./EFPY) (1) | Growth (Deg./EFPY) (2) | Growth for Operating Period (degrees) | Minimum Structural Ligament (degrees) | Critical Ligament (degrees) |
|--|----------------------------------|----------|-----------------------|------------------------|---------------------------------------|---------------------------------------|-----------------------------|
| Tube below 17" from TTS | 18 Calendar Month (CM) Operation | 1.5 | 0.12 | 20.65 | 31 | 126 | 157 |
| Lower-most 1" of Tube | 18 CM Operation | 1.5 | 0.12 | 20.65 | 31 | 235 | 266 |
| 1) It is conservatively assumed that EFPY=1 Calendar Year 2) 95% upper value of typical growth rates from Reference 3 3) Based on smallest (Model F) mean tubesheet bore dimension | | | | | | | |

The residual structural ligament must be adjusted for growth during the anticipated operating period between the current and the next planned inspection. Typically, the operating periods for the affected plants are 18 calendar months (1.5 EFPY); however, some plants have planned outages in which no primary side inspections will be performed. Thus, cycle length adjustments

Enclosure 1 Basis for Proposed Change

are made to the minimum structural ligament required. For the VEGP SGs, referring to Table 1.0 above, the maximum allowable through-wall circumferential crack size located below 17 inches from TTS in a SG tube is 203° ($= 360^\circ - 157^\circ$) for one cycle of operation (18 month SG tubing eddy current inspection interval) and for the lower-most 1 inch a maximum allowable through-wall circumferential crack size is 94° ($= 360^\circ - 266^\circ$).

Note in the response to RAI Question 17 in Reference 11, the maximum allowable through-wall circumferential crack size located below 17 inches from TTS in a SG tube was reduced to 203° . Also, for the lower-most 1 inch a maximum allowable through-wall circumferential crack size was reduced to 94° .

Primary-to-Secondary Leakage Discussion

A basis, using the D'Arcy formula for flow through a porous medium, is provided to assure that the accident induced leakage for the limiting accident will not exceed the value assumed in the safety analysis for the plant if the observed leakage during normal operation is within its limits for the bounding plant is discussed in Reference 3. The bounding plant envelopes all plants who are candidates for applying H*/B*. The D'Arcy formulation was previously compared to other potential models such as the Bernoulli equation or orifice flow formulation and was found to provide the most conservative results.

Assuming zero contact pressure in the tube joint, the length of undegraded crevice required to limit the accident induced leakage to less than the value assumed in the safety analysis for the limiting plant is calculated to be 3.78 inches. By definition of the IARC, a tube that can remain in service has an undegraded crevice of 17 inches. Therefore, a factor of safety of 4.5 is available (17 inches / 3.78 inches). Expressed in length terms, the length margin in the crevice is 13.22 inches. Significant margin on crevice length is available even if only the distance below the neutral axis of the tubesheet is considered. This distance is approximately 6.5 inches. A factor of safety of 1.72 is available. Expressed in length terms, the length margin in the crevice is 2.72 inches below the neutral axis of the tubesheet. During normal operating conditions, the tubesheet flexes due to differential pressure loads, causing the tubesheet holes above the neutral axis to dilate, and below the neutral axis, to constrict. No mechanical benefit is assumed in the analysis due to tubesheet bore constriction below the neutral axis of the tubesheet; however, first principles dictate that the tubesheet bore and crevice must decrease. Therefore, the leakage analysis provided is conservative.

Based on the above, with a length of undegraded crevice of 17 inches, it is concluded that if the normal operating leakage is within its allowable value, the accident induced leakage will also be within the value assumed in the VEGP safety analysis. The total increase in leakage during a postulated accident condition would be less than a factor of 3.5 (0.35 gpm allowable leakage during a SLB event / 0.1 gpm allowable leakage during normal operating conditions).

For integrity assessments, the ratio of 2.5 will be used in completion of both the condition monitoring (CM) and operational assessment (OA) upon implementation of the IARC. For example, for the CM assessment, the component of leakage from the lower 4 inches of the most limiting steam generator during the prior cycle of operation will be multiplied by a factor of 2.5 and added to the total leakage from any other source and compared to the allowable accident analysis leakage assumption. For the OA, the difference in leakage from the allowable limit during the limiting design basis accident minus the leakage from the other sources will be divided by 2.5 and compared to the observed leakage. An administrative limit will be established to not exceed the calculated value.

Enclosure 1
Basis for Proposed Change

Reporting Requirements

SNC proposes to report the following additional information associated with the IARC following the Fall 2008 inspections and any additional inspections during the subsequent operating cycle:

- The number of indications and location, size, orientation, whether initiated on primary or secondary side for each service-induced flaw within the thickness of the tubesheet, and the total of the circumferential components and any circumferential overlap below 17 inches from TTS.
- The primary-to-secondary leakage rate observed in each SG (if it is not practical to assign leakage to an individual SG, the entire primary-to-secondary leakage should be conservatively assumed to be from one SG) during this cycle preceding the inspection which is the subject of the report.
- The calculated accident leakage rate from the portion of tube below 17 inches from TTS for the most limiting accident in the most limiting SG. A factor of 2.5 shall be used to relate this accident leakage to the related operational leakage.

The proposed reporting requirements are only required for the applicable period of the IARC.

Inspection and Repair of Tube

The tube below the IARC depth will be examined with a qualified technique, e.g., +Point probe. Axial flaws have no impact on the structural integrity of the tube in this region and may be left in service. Tubes with circumferential indications which exceed the maximum acceptable tube flaw size of 203 degrees will be plugged. Flaws that require tube plugging will result in expansion of the inspection scope per EPRI, "Pressurized Water Reactor Steam Generator Examination Guidelines." Stress concentration areas may be used to define the extent of the expansion, e.g., if a repairable indication is located in a bulge/overexpansion (BLG/OXP) eddy current signal, the expansion may be limited to the non-inspected BLG/OXPs. The circumferential components of multiple flaws within 1 inch of each other axially will be combined in accordance with TS 5.5.9.c.3. Furthermore, the circumferential component of flaws within the bottom 1 inch of the SG tubes is limited to 94 degrees.

Note: References and Tables in Section 5 of Reference 2 refer to the wrong section (e.g., Reference 6-1 should be 5-1). Westinghouse has issued an errata letter to correct the discrepancies, and a copy of the letter is provided in Enclosure 10.

5.0 Regulatory Evaluation

5.1 No Significant Hazards Consideration

SNC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

Enclosure 1
Basis for Proposed Change

(1) Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

Of the various accidents previously evaluated, the proposed changes only affect the steam generator tube rupture (SGTR) event evaluation and the postulated steam line break (SLB), locked rotor and control rod ejection accident evaluations. Loss-of-coolant accident (LOCA) conditions cause a compressive axial load to act on the tube. Therefore, since the LOCA tends to force the tube into the tubesheet rather than pull it out, it is not a factor in this licensing amendment request. Another faulted load consideration is a safe shutdown earthquake (SSE); however, the seismic analysis of Model F steam generators has shown that axial loading of the tubes is negligible during an SSE.

At normal operating pressures, leakage from primary water stress corrosion cracking (PWSCC) below 17 inches from the top of the tubesheet is limited by both the tube-to-tubesheet crevice and the limited crack opening permitted by the tubesheet constraint. Consequently, negligible normal operating leakage is expected from cracks within the tubesheet region.

For the SGTR event, the required structural margins of the steam generator tubes is maintained by limiting the maximum allowable through-wall circumferential crack size to remain in service to 203 degrees below 17 inches from the top of the tubesheet and for the lower-most 1 inch limiting the maximum allowable through-wall circumferential crack size to 94 degrees, for the duration of the 18-month SG tubing eddy current inspection interval. Tube rupture is precluded for cracks in the hydraulic expansion region due to the constraint provided by the tubesheet. The potential for tube pullout is mitigated by limiting the maximum allowable through-wall circumferential crack size to remain in service to 203 degrees below 17 inches from the top of the tubesheet and for the lower-most 1 inch limiting the maximum allowable through-wall circumferential crack size 94 degrees, for the duration of the 18-month SG tubing eddy current inspection interval. These allowable crack sizes take into account eddy current uncertainty and crack growth rate. It has been shown that a circumferential crack with an azimuthal extent of 203 degrees, and to 94 degrees for the bottom 1 inch, for the 18-month SG tubing eddy current inspection interval meets the performance criteria of NEI 97-06, Rev. 2, "Steam Generator Program Guidelines" and the August 1976 draft Regulatory Guide (RG) 1.121, "Bases for Plugging Degraded PWR Steam Generator Tubes" (Reference 14). Therefore, the margin against tube burst/pullout is maintained during normal and postulated accident conditions and the proposed change does not result in a significant increase in the probability or consequence of a SGTR.

The probability of a SLB is unaffected by the potential failure of a SG tube as the failure of a tube is not an initiator for a SLB event. SLB leakage is limited by leakage flow restrictions resulting from the leakage path above potential cracks through the tube-to-tubesheet crevice. The leak rate during postulated accident conditions (including locked rotor and control rod ejection) has been shown to remain within the accident analysis assumptions for all axial or circumferentially oriented cracks occurring 17 inches below the top of the tubesheet. Since normal operating leakage is limited to 150 gpd (approximately 0.10 gpm), the attendant accident condition leak rate, assuming all leakage to be from indications below 17 inches from the top of the tubesheet, would be bounded by 0.35 gpm. This value is within the accident analysis assumptions for the limiting design basis accident for VEGP, which is the postulated SLB event.

Enclosure 1
Basis for Proposed Change

Based on the above, the performance criteria of NEI-97-06, Rev. 2 and draft RG 1.121 continue to be met and the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Does the proposed change create the possibility of a new or different accident from any accident previously evaluated?

Response: No

The proposed change does not introduce any changes or mechanisms that create the possibility of a new or different kind of accident. Tube bundle integrity is expected to be maintained for all plant conditions upon implementation of the interim alternate repair criterion. The proposed change does not introduce any new equipment or any change to existing equipment. No new effects on existing equipment are created nor are any new malfunctions introduced.

Therefore, based on the above evaluation, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change maintains the required structural margins of the steam generator tubes for both normal and accident conditions. NEI 97-06, Rev. 2 and draft RG 1.121 are used as the basis in the development of the limited tubesheet inspection depth methodology for determining that steam generator tube integrity considerations are maintained within acceptable limits. Draft RG 1.121 describes a method acceptable to the NRC staff for meeting General Design Criteria 14, 15, 31, and 32 by reducing the probability and consequences of a SGTR. Draft RG 1.121 concludes that by determining the limiting safe conditions of tube wall degradation beyond which tubes with unacceptable cracking, as established by inservice inspection, should be removed from service or repaired, the probability and consequences of a SGTR are reduced. This draft RG uses safety factors on loads for tube burst that are consistent with the requirements of Section III of the ASME Code.

For axially oriented cracking located within the tubesheet, tube burst is precluded due to the presence of the tubesheet. For circumferentially oriented cracking in a tube or the tube-to-tubesheet weld, Reference 3 defines a length of remaining tube ligament that provides the necessary resistance to tube pullout due to the pressure induced forces (with applicable safety factors applied). Additionally, it is shown that application of the limited tubesheet inspection depth criteria will not result in unacceptable primary-to-secondary leakage during all plant conditions.

Based on the above, it is concluded that the proposed changes do not result in any reduction of margin with respect to plant safety as defined in the Updated Safety Analysis Report or bases of the plant Technical Specifications.

Based on the above, SNC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements

Enclosure 1 Basis for Proposed Change

Steam Generator (SG) tube inspection and repair limits are specified in Section 5.5.9, "Steam Generator (SG) Program" of the VEGP Technical Specifications (TS). The current TS require that flawed tubes be repaired if the depths of the flaws are greater than or equal to 40% through wall. The TS repair limits ensure that tubes accepted for continued service will retain adequate structural and leakage integrity during normal operating, transient, and postulated accident conditions, consistent with General Design Criteria (GDC) 14, 15, 30, 31, and 32 of 10 CFR 50, Appendix A. Specifically, the GDC state that the Reactor Coolant Pressure Boundary (RCPB) shall have "an extremely low probability of abnormal leakage . . . and gross rupture" (GDC 14), "shall be designed with sufficient margin" (GDCs 15 and 31), shall be of "the highest quality standards practical" (GDC 30), and shall be designed to permit "periodic inspection and testing...to assess...structural and leaktight integrity" (GDC 32). Structural integrity refers to maintaining adequate margins against gross failure, rupture, and collapse of the steam generator tubing. Leakage integrity refers to limiting primary to secondary leakage during all plant conditions to within acceptable limits.

5.3 Precedent

SNC was previously granted similar TS changes. One was granted on September 12, 2006 (Reference 1) and involved a one-time change to TS 5.5.9, "Steam Generator (SG) Tube Surveillance Program," regarding the required SG inspection scope for VEGP, Unit 1, during Refueling Outage 13 and the subsequent operating cycle and VEGP, Unit 2, during Refueling Outage 12, and the subsequent operating cycle. Another TS change was granted on September 21, 2005 (Reference 10), that involved a one-time change to TS 5.5.9, "Steam Generator (SG) Tube Surveillance Program," regarding the required SG inspection scope for VEGP, Unit 2, during Refueling Outage 11, and the subsequent operating cycle. These changes modified the inspection requirements for portions of the SG tubes within the hot leg tubesheet region of the SGs. The most recent change was granted on April 9, 2008 (Reference 13) that involved a one-time change to TS 5.5.9, "Steam Generator (SG) Tube Surveillance Program," and TS 5.6.10, "Reporting Requirements," regarding the required SG inspection scope and reporting requirements for Vogtle, Unit 1, during Refueling Outage 14, and the subsequent operating cycle. This LAR adds the Vogtle Unit 2, fall 2008 refueling outage (2R13) and the Unit 2 subsequent operating cycle to the scope of the April 9, 2008 licensing amendment.

5.4 Conclusion

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public with the implementation of the interim alternate repair criterion discussed above.

Enclosure 1
Basis for Proposed Change

6.0 Environmental Considerations

SNC has evaluated the proposed amendment for environmental considerations. The review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, and would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendments meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

Enclosure 1
Basis for Proposed Change

7.0 References

1. Vogtle Electric Generating Plant Units 1 and 2, "Issuance of Amendments Regarding the Steam Generator Tube Surveillance Program," September 12, 2006, (TAC Nos. MD2642 and MD2643).
2. Vogtle Electric Generating Plant Units 1 and 2, "License Amendment Request to Technical Specification (TS) Sections TS 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10, "Steam Generator Tube Inspection Report," November 30, 2007, (ADAMS Accession No. ML073380100).
3. Westinghouse Electric Company LLC, LTR-CDME 08-11-P, "Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone," January 31, 2008.
4. TSTF-449, Rev. 4, "Steam Generator Tube Integrity," Technical Specifications Task Force Standard Technical Specification Change Traveler, April 14, 2005.
5. NEI 97-06, Rev. 2, "Steam Generator Program Guidelines," May 2005.
6. ETSS 20510.1; Technique for Detection of Circumferential PWSCC at Expansion Transitions.
7. EPRI TR-107197; Depth Based Structural Analysis Methods for Steam Generator Circumferential Indications; November 1997.
8. EPRI 1012987; "Steam Generator Integrity Assessment Guidelines," July 2006.
9. NRC Memorandum, "Wolf Creek Generating Station – Summary of Conference Call Held with PWR Licensees on the New Temporary License Amendment Needed for Steam Generator Tube Inspections in Spring 2008 Refueling Outages," January 22, 2008 (TAC No. MD7762).
10. Vogtle Electric Generating Plant Units 1 and 2, "Issuance of Amendments Regarding the Steam Generator Tube Surveillance Program," September 21, 2005, (TAC Nos. MC8078 and MC8079).
11. Westinghouse Electric Company LLC LTR-CDME-08-43 P-Attachment, "Response to NRC Request for Additional Information Relating to LTR-CDME-08-11 P-Attachment," dated March 18, 2008.
12. GP-18283, "Transmittal of Document – LTR-CDME-08-25, 'Errata for LTR-CDME-08-11; Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone,'" dated February 12, 2008.
13. Vogtle Electric Generating Plant, Units 1 and 2, "Issuance of Amendments Regarding Changes to Technical Specification (TS) Sections TS 5.5.9, 'Steam Generator (SG) Program' and TS 5.6.10, 'Steam Generator Tube Inspection Report' (TAC Nos. MD7450 and MD7451)," dated April 9, 2008.
14. Draft Regulatory Guide 1.121, "Bases for Plugging Degraded PWR Steam Generator Tubes," dated August 1976, (ADAMS Accession No. ML003739366).

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 2

Markup of Proposed Technical Specifications

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 3

Typed Pages for Technical Specification

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 4

**Westinghouse Letter, CAW-08-2449, Application for Withholding and Affidavit,
Proprietary Information Notice, and Copyright Notice**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 5

**Westinghouse Electric Company LLC, LTR-CDME 08-11-NP, "Interim Alternate
Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet
Expansion Zone," dated January 31, 2008 (Non-Proprietary)**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 6

**Westinghouse Electric Company LLC, LTR-CDME 08-11-P, "Interim Alternate Repair
Criterion (ARC) for Cracks in the Lower Region of the Tubesheet Expansion Zone,"
dated January 31, 2008 (Proprietary)**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 7

**Westinghouse Letter, CAW-08-2448, Application for Withholding and Affidavit,
Proprietary Information Notice, and Copyright Notice**

**Vogle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 8

**Westinghouse Electric Company LLC, LTR-CDME-08-043 NP-Attachment, "Response to
NRC Request for Additional Information Relating to LTR-CDME-08-11 NP-Attachment,"
dated March 18, 2008**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 9

**Westinghouse Electric Company LLC, LTR-CDME-08-43 P-Attachment, "Response to
NRC Request for Additional Information Relating to LTR-CDME-08-11 P-Attachment,"
dated March 18, 2008**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 10

**GP-18283, "Transmittal of Document – LTR-CDME-08-25, 'Errata for LTR-CDME-08-11;
Interim Alternate Repair Criterion (ARC) for Cracks in the Lower Region of the Tubesheet
Expansion Zone,' " dated February 12, 2008**

**Vogtle Electric Generating Plant Units 1 and 2
License Amendment Request to Revise Technical Specification (TS)
Sections 5.5.9, "Steam Generator (SG) Program" and TS 5.6.10,
"Steam Generator Tube Inspection Report" for Interim Alternate Repair Criterion**

Enclosure 11

List of Regulatory Commitments

List of Regulatory Commitments

The following table identifies those actions committed by Southern Nuclear Operating Company in this document for Vogtle Electric Generating Plant. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

| Commitment | Due Date/Event |
|--|-------------------------|
| For integrity assessments, the ratio of 2.5 will be used in the completion of both the condition monitoring (CM) and operational assessment (OA) upon implementation of the IARC. For example, for the CM assessment, the component of leakage from the lower 4 inches for the most limiting steam generator during the prior cycle of operation will be multiplied by a factor of 2.5 and added to the total leakage from any other source and compared to the allowable accident analysis leakage assumption. For the OA, the difference in leakage from the allowable limit during the limiting design basis accident minus the leakage from the other sources will be divided by 2.5 and compared to the observed leakage. An administrative limit will be established to not exceed the calculated value. | Completion of CM and OA |