



Serial: RNP-RA/07-0004

JAN 19 2007

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

RESUBMISSION OF REQUEST FOR TECHNICAL SPECIFICATIONS
CHANGE REGARDING STEAM GENERATOR ALTERNATE REPAIR CRITERIA

Ladies and Gentlemen:

In accordance with the provisions of the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power and Light Company, also known as Progress Energy Carolinas (PEC), Inc., is submitting a request for an amendment to the Technical Specifications (TS) contained in Appendix A of the Operating License for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed amendment would modify TS 5.5.9 to add steam generator (SG) alternate repair criteria and TS 5.6.8 to add additional SG reporting requirements.

Specifically, the proposed change would add requirements to TS 5.5.9, called alternate repair criteria, which would allow inspection of the tube to start within the tubesheet region (a minimum of 17 inches below the top of the tubesheet) and add requirements to report indications in this region and primary to secondary leakage that could be attributed to the uninspected portion of the tube within the tubesheet. The change is being proposed as a temporary requirement for the next operating cycle. This proposed change supersedes the previous license amendment request pertaining to steam generator alternate repair criteria, which was submitted by letter dated October 12, 2006.

Attachment I provides an Affirmation pursuant to 10 CFR 50.30(b).

Attachment II provides a description of the proposed change, a technical justification for the proposed changes, a summary of commitments, a No Significant Hazards Consideration Determination, and an Environmental Impact Consideration.

Attachment III provides a markup of the current TS pages and Attachment IV provides retyped pages for the proposed TS.

A001

A plant-specific analysis for HBRSEP, Unit No. 2, is provided in Attachments V and VI. Attachment V provides a non-proprietary version of the report WCAP-16627-NP, "Steam Generator Alternate Repair Criteria for Tube Portion Within the Tubesheet at H. B. Robinson Unit 2," that can be released for public disclosure. Attachment VI provides a proprietary version of the report, designated WCAP-16627-P, that should be withheld from public disclosure. Attachment VII provides an Affidavit from Westinghouse regarding the proprietary nature of WCAP-16627-P, as required by 10 CFR 2.390.

In accordance with 10 CFR 50.91(b), PEC is providing the State of South Carolina with a copy of the proposed license amendment.

PEC requests approval of the proposed license amendment by March 30, 2007, to allow for the use of the alternate repair criteria for inspections planned during the next refueling outage, which is currently scheduled to begin on April 7, 2007.

If you have any questions concerning this matter, please contact Mr. C. T. Baucom at (843) 857-1253.

Sincerely,



J. F. Lucas

Manager - Support Services - Nuclear

JFL/cac

Attachments:

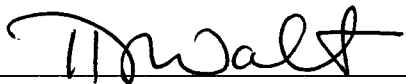
- I. Affirmation
- II. Request for Technical Specifications Change Regarding Steam Generator Alternate Repair Criteria
- III. Markup of Technical Specifications Pages
- IV. Retyped Technical Specifications Pages
- V. WCAP-16627-NP, "Steam Generator Alternate Repair Criteria for Tube Portion Within the Tubesheet at H. B. Robinson Unit 2" – Non-Proprietary
- VI. WCAP-16627-P, "Steam Generator Alternate Repair Criteria for Tube Portion Within the Tubesheet at H. B. Robinson Unit 2" – Proprietary
- VII. Westinghouse Affidavit Regarding Proprietary WCAP-16627-P

c: Mr. T. P. O'Kelley, Director, Bureau of Radiological Health (SC)
Mr. H. J. Porter, Director, Division of Radioactive Waste Management (SC)
Dr. W. D. Travers, NRC, Region II
NRC Project Manager, NRR
NRC Resident Inspectors, HBRSEP
Attorney General (SC)

AFFIRMATION

The information contained in letter RNP-RA/07-0004 is true and correct to the best of my information, knowledge, and belief; and the sources of my information are officers, employees, contractors, and agents of Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. I declare under penalty of perjury that the foregoing is true and correct.

Executed On: 1/19/07



T. D. Walt
Vice President, HBRSEP, Unit No. 2

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE REGARDING STEAM GENERATOR ALTERNATE REPAIR CRITERIA

Description of the Current Condition and the Proposed Change

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. Carolina Power and Light Company has previously submitted proposed Technical Specifications (TS) changes by letter dated May 30, 2006, to revise several TS sections, including 5.5.9 and 5.6.8, consistent with the NRC-approved Revision 4 to Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications Change Traveler, TSTF-449, "Steam Generator Tube Integrity." The technical justifications for the changes proposed herein are applicable to the TS as proposed in the May 30, 2006 submittal. Therefore, the edited TS pages for this proposed amendment are based upon the TS pages as proposed in the May 30, 2006 submittal, with minor editorial revisions resulting from an NRC request for additional information (RAI), received by e-mail on September 19, 2006, with the response provided by letter dated November 20, 2006.

The H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications Section 5.5.9 specifies the repair criteria requirements for the Steam Generator (SG) Program. The Technical Specifications requirement for SG tube repair criteria, proposed in the May 30, 2006 submittal, including minor editorial revisions in response to the September 19, 2006 RAI, states:

- "c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding the following criteria shall be plugged: 47% of the nominal tube wall thickness if the next inspection interval of that tube is 12 months, and a 2% reduction in the repair criteria for each 12 month period until the next inspection of the tube."

The May 30, 2006 submittal also delineates the provisions for the tube inspections in TS 5.5.9.d, as follows:

- "d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the 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 tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of

degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.”

Additionally, the May 30, 2006 submittal included the proposed version of TS 5.6.8, which provides the requirements for the steam generator tube inspection report.

Alternate repair criteria are being added to the tube repair criteria in TS 5.5.9.c, as follows:

“The following alternate tube repair criteria may be applied as an alternative to the preceding criteria, until the end of Operating Cycle 25:

Degradation found in the portion of the tube below 17 inches from the top of the tubesheet does not require plugging. Tubes with degradation identified in the portion of the tube from the top of the tubesheet to 17 inches below the top of the tubesheet shall be plugged upon detection.”

The proposed change to TS 5.5.9.d delineates the area required to be inspected by incorporating the following guidance:

“...(until the end of Operating Cycle 25 the required inspection length extends 17 inches below the top of the tubesheet on the tube hot leg side to 17 inches below the top of the tubesheet on the tube cold leg side)...”

The reporting requirements of TS 5.6.8 are being revised to include the following additional requirements:

- “h. The number of indications including location, size, and orientation, and whether the indications initiated in the primary or secondary side of the tube for each indication detected in the upper 17 inches of the tubesheet region of the tube.
- i. The operational cycle primary to secondary leakage rate observed in each SG during the cycle preceding the tube inspection that is the subject of this report and the corresponding calculated accident leakage from the lower 4.81 inches of the tube for the most-limiting accident in the most-limiting SG.”

Technical Justification for the Proposed Changes

HBRSEP, Unit No. 2, is currently in Operating Cycle 24. The unit has three Westinghouse Model 44F steam generators, which were installed as replacement steam generators in 1984. There are 3214 thermally treated Alloy 600 tubes in each of the steam generators. The tubes have an outside diameter of 0.875 inch, an average wall thickness of 0.050 inch, and there are six stainless steel tube support plates and a flow distribution baffle. The tube support plate holes are quatrefoil shaped and the flow distribution baffle holes are round. A total of 26 tubes have been plugged.

HBRSEP, Unit No. 2, has typically used bobbin probes for inspecting the length of tubing within the tubesheet; however, the bobbin probe is not capable of reliably detecting stress corrosion cracks (SCCs) in the tubesheet region, should such cracks be present. For this reason, the bobbin probe inspections have been supplemented with rotating coil probes in a region extending from 4 inches above the top of the tubesheet to 2 inches below the top of the tubesheet. This zone includes the tube expansion transition zone located at the top of the tubesheet. The expansion transition zone contains residual stress, which are considered likely locations for SCC, should it develop.

The proposed changes will clarify the tube examination and plugging requirements within the tubesheet region of the steam generator. These changes are based on the technical justifications contained in the report WCAP-16627-P, "Steam Generator Alternate Repair Criteria for Tube Portion Within the Tubesheet at H. B. Robinson Unit 2." Non-proprietary and proprietary versions of that report are provided in Attachments V and VI of this letter.

The WCAP-16627-P report concludes that the structural integrity of the primary to secondary pressure boundary is unaffected by tube degradation of any magnitude below a tube location-specific depth ranging from 4.78 to 8.34 inches, designated as the H* depth. Additionally, the accident condition leak rate integrity can be bounded by twice the normal operational leak rate from degradation at or below a calculated distance of 8.01 inches, designated as the B* depth, from the top of the nominally 21.81 inch thick tubesheet, including degradation of the tube end welds.

The proposed TS Bases for TS Section 3.4.13 in the May 30, 2006 submittal, and further revised by letter dated November 20, 2006, provide the supporting technical information for the proposed primary to secondary operational leakage limit of 75 gallons per day (gpd). The proposed TS Bases state:

"The safety analysis for an event resulting in steam discharge to the atmosphere assumes that primary to secondary LEAKAGE from all steam generators (SGs) is 0.3 gpm or increases to 0.3 gpm as a result of accident induced conditions. The LCO requirement to limit primary to secondary LEAKAGE through any one SG to less than or equal to 75 gpd is less than the conditions assumed in the safety analyses. Primary to secondary LEAKAGE is a factor in the dose releases outside containment resulting from a steam line break (SLB) accident. To a lesser extent, other accidents or transients involve secondary steam release to the atmosphere, such as a steam generator tube rupture (SGTR). The leakage contaminates the secondary fluid. For the SGTR, the activity released due to the 0.3 gpm primary to secondary LEAKAGE is relatively insignificant compared to the activity released via the ruptured tube. The safety analysis for the SGTR accident assumes 0.3 gpm total primary to secondary LEAKAGE in all generators as an initial condition. After mixing in the secondary side, the activity is then released via the SG PORVs or safeties. This release pathway continues until the SGs are isolated, which is relatively soon for the affected SG compared to the intact SGs. The dose consequences resulting from the SGTR accident are within the limits defined in 10 CFR 50.67."

Therefore, the 75 gpd limit maintains sufficient margin to accommodate the leak rate analysis provided in WCAP-16627-P.

The proposed change include additional margin beyond that provided by the analyses contained in WCAP-16627-P. The technical justification provided in WCAP-16627-P establishes the calculation and analytic basis that examination to approximately 9 inches below the top of the tubesheet is sufficient. The TS requirements for the SG inspection program proposed in this license amendment request for HBRSEP, Unit No. 2, conservatively include additional margin. This license amendment proposes an inspection distance of 17 inches from the top of the tubesheet. This additional distance ensures that greater than 50% of the tube length within the tubesheet will be subjected to examination. Also, the tubes to be inspected will be subjected to a more restrictive plugging criterion, which states, "Tubes with degradation identified in the portion of the tube from the top of the tubesheet to 17 inches below the top of the tubesheet shall be plugged upon detection."

The additional reporting requirements being added to TS 5.6.8 will establish the appropriate reporting criteria for the tubes that required repair under the proposed alternate repair criteria and a quantification of the operational and accident-induced leakage that could potentially be attributable to the uninspected region of the SG tubes.

The proposed change, along with the previously proposed changes to the requirements for SG integrity submitted by letter dated May 30, 2006, will establish appropriate inspection requirements to ensure SG integrity under normal operation and accident conditions for HBRSEP, Unit No. 2. These changes will allow the inspections of the HBRSEP, Unit No. 2, SGs to be conducted appropriately and prevent unnecessary plugging of SG tubes that should not be removed from service.

Additionally, the following commitments will be implemented with this license amendment:

- If crack indications are found in any SG tube during Refueling Outage 24, then the next inspection of each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.
- During Refueling Outage 24, areas of SG tubes within the tubesheet that are not fully expanded will be included in the scheduled inspection and the 17 inch tubesheet inspection limitation will not be applied to the areas of these tubes that are not fully expanded.

No Significant Hazards Consideration Determination

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This

change will revise TS 5.5.9, Steam Generator (SG) Program, and TS 5.6.8, Steam Generator Tube Inspection Report, to incorporate requirements that will allow the use of alternate repair criteria that establishes an appropriate scope of the tube inspection for the portion of the tube within the tubesheet region.

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards considerations using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The proposed change does not involve physical changes to any plant structure, system, or component. The inspection of the portion of the steam generator tubes within the tubesheet region is being changed to identify the appropriate scope of inspection and the criteria for plugging tubes that are found with degradation. The proposed requirements will continue to ensure that the probability of a steam generator tube rupture accident is not increased. Therefore, the probability of occurrence for a previously analyzed accident is not significantly increased.

The consequences of a previously analyzed accident are dependent on the initial conditions assumed for the analysis, the behavior of the fission product barriers during the analyzed accident, the availability and successful functioning of the equipment assumed to operate in response to the analyzed event, and the setpoints at which these actions are initiated. The proposed inspection and repair requirements will ensure that the plant continues to meet applicable design and safety analyses acceptance criteria. The proposed change does not affect the performance of any equipment used to mitigate the consequences of an analyzed accident. As a result, no analysis assumptions are impacted and there are no adverse effects on the factors that contribute to offsite or onsite dose as a result of an accident. The proposed change does not affect setpoints that initiate protective or mitigative actions. The proposed change ensures that plant structures, systems, and components are maintained consistent with the safety analysis and licensing bases. Based on this evaluation, there is no significant increase in the consequences of a previously analyzed accident.

Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident From Any Previously Evaluated.

The proposed change does not involve any physical alteration of plant systems, structures, or components. No new or different equipment is being installed. No installed equipment is being operated in a different manner. There is no change to the parameters within which the plant is normally operated or in the setpoints that initiate protective or mitigative actions. The proposed inspection and repair criteria will establish appropriate requirements to ensure that the steam generator tubes are properly maintained. As a result, no new

failure modes are being introduced. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety.

There is no impact on any margin of safety resulting from the proposed steam generator tube inspection and repair criteria. The integrity of the steam generator tubes and associated primary to secondary leakage criteria will be maintained consistent with the applicable safety margins as established for HBRSEP, Unit No. 2, by use of the proposed steam generator alternate repair criteria.

Therefore, this change does not involve a significant reduction in the margin of safety.

Based on the above discussion, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has determined that the requested change does not involve a significant hazards consideration.

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions for categorical exclusion for performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has reviewed this request and determined that the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows.

Proposed Change

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise TS 5.5.9, Steam Generator (SG) Program, and TS 5.6.8, Steam Generator Tube Inspection Report, to incorporate requirements that will allow the use of alternate repair criteria that establishes the appropriate scope of the tube inspection for the portion of the tube within the tubesheet region.

Basis

The proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons.

1. As demonstrated in the No Significant Hazards Consideration Determination, the proposed change does not involve a significant hazards consideration.
2. The use of the proposed alternate repair criteria has no negative impact on effluent releases. The limits on primary to secondary leakage are not being increased. Therefore, the proposed change does not result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite.
3. The proposed change does not involve physical plant changes, or introduce any new mode of plant operation. The inspection requirements will not change the access requirements for these inspections such that radiation exposure would be increased. Therefore, the proposed change does not result in a significant increase in individual or cumulative occupational radiation exposures.

United States Nuclear Regulatory Commission
Attachment III to Serial: RNP-RA/07-0004
3 pages including cover page

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

**REQUEST FOR TECHNICAL
SPECIFICATIONS CHANGE REGARDING
STEAM GENERATOR ALTERNATE REPAIR CRITERIA**

MARKUP OF TECHNICAL SPECIFICATIONS PAGES

The following alternate tube repair criteria may be applied as an alternative to the preceding criteria, until the end of Operating Cycle 25:

Degradation found in the portion of the tube below 17 inches from the top of the tubesheet does not require plugging. Tubes with degradation identified in the portion of the tube from the top of the tubesheet to 17 inches below the top of the tubesheet shall be plugged upon detection.

Programs and Manuals
5.5

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

(until the end of Operating Cycle 25 the required inspection length extends 17 inches below the top of the tubesheet on the tube hot leg side to 17 inches below the top of the tubesheet on the tube cold leg side)

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 75 gallons per day per SG.
3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."
- c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding the following criteria shall be plugged: 47% of the nominal tube wall thickness if the next inspection interval of that tube is 12 months, and a 2% reduction in the repair criteria for each 12 month period until the next inspection of the tube.
- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the 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 tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.
 1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.
 2. Inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In

(continued)

5.6 Reporting Requirements (continued)

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by Condition B or H of LCD 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.7 Tendon Surveillance Report

- a. Notification of a pending sample tendon test, along with detailed acceptance criteria, shall be submitted to the NRC at least two months prior to the actual test.
- b. A report containing the sample tendon test evaluation shall be submitted to the NRC within six months of conducting the test.

5.6.8 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9, Steam Generator (SG) Program. The report shall include:

- a. The scope of inspections performed on each SG.
- b. Active degradation mechanisms found.
- c. Nondestructive examination techniques utilized for each degradation mechanism.
- d. Location, orientation (if linear), and measured sizes (if available) of service induced indications.
- e. Number of tubes plugged during the inspection outage for each active degradation mechanism.
- f. Total number and percentage of tubes plugged to date.
- g. The results of condition monitoring, including the results of tube pulls and in-situ testing.

<Insert new requirements h. and i.>

- h. The number of indications including location, size, and orientation, and whether the indications initiated in the primary or secondary side of the tube for each indication detected in the upper 17 inches of the tubesheet region of the tube.
- i. The operational cycle primary to secondary leakage rate observed in each SG during the cycle preceding the tube inspection that is the subject of this report and the corresponding calculated accident leakage from the lower 4.81 inches of the tube for the most-limiting accident in the most-limiting SG.

United States Nuclear Regulatory Commission
Attachment IV to Serial: RNP-RA/07-0004
3 pages including cover page

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

**REQUEST FOR TECHNICAL
SPECIFICATIONS CHANGE REGARDING
STEAM GENERATOR ALTERNATE REPAIR CRITERIA**

RETYPED TECHNICAL SPECIFICATIONS PAGES

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program
(continued)

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 75 gallons per day per SG.
 3. The operational LEAKAGE performance criterion is specified in LCD 3.4.13. "RCS Operational LEAKAGE."
- c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding the following criteria shall be plugged: 47% of the nominal tube wall thickness if the next inspection interval of that tube is 12 months, and a 2% reduction in the repair criteria for each 12 month period until the next inspection of the tube.

The following alternate tube repair criteria may be applied as an alternative to the preceding criteria, until the end of Operating Cycle 25:

Degradation found in the portion of the tube below 17 inches from the top of the tubesheet does not require plugging. Tubes with degradation identified in the portion of the tube from the top of the tubesheet to 17 inches below the top of the tubesheet shall be plugged upon detection.

- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet (until the end of Operating Cycle 25 the required inspection length extends 17 inches below the top of the tubesheet on the tube hot leg side to 17 inches below the top of the tubesheet on the tube cold leg side), and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and

(continued)

5.6 Reporting Requirements (continued)

5.6.7 Tendon Surveillance Report

- a. Notification of a pending sample tendon test, along with detailed acceptance criteria, shall be submitted to the NRC at least two months prior to the actual test.
- b. A report containing the sample tendon test evaluation shall be submitted to the NRC within six months of conducting the test.

5.6.8 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9. Steam Generator (SG) Program. The report shall include:

- a. The scope of inspections performed on each SG.
 - b. Active degradation mechanisms found.
 - c. Nondestructive examination techniques utilized for each degradation mechanism.
 - d. Location, orientation (if linear), and measured sizes (if available) of service induced indications.
 - e. Number of tubes plugged during the inspection outage for each active degradation mechanism.
 - f. Total number and percentage of tubes plugged to date.
 - g. The results of condition monitoring, including the results of tube pulls and in-situ testing.
 - h. The number of indications including location, size, and orientation, and whether the indications initiated in the primary or secondary side of the tube for each indication detected in the upper 17 inches of the tubesheet region of the tube.
 - i. The operational cycle primary to secondary leakage rate observed in each SG during the cycle preceding the tube inspection that is the subject of this report and the corresponding calculated accident leakage from the lower 4.81 inches of the tube for the most-limiting accident in the most-limiting SG.
-
-