

RS-12-146

10 CFR 50.90

August 30, 2012

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-001

Braidwood Station, Units 1 and 2  
Facility Operating License Nos. NPF-72 and NPF-77  
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2  
Facility Operating License Nos. NPF-37 and NPF-66  
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Supplemental Information Supporting License Amendment Request to Revise Technical Specifications (TS) 5.5.9, "Steam Generator (SG) Program," and TS 5.6.9, "Steam Generator (SG) Tube Inspection Report," for Permanent Alternate Repair Criteria

- References:
- 1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specifications (TS) Sections 5.5.9, 'Steam Generator (SG) Program,' and TS 5.6.9, 'Steam Generator (SG) Tube Inspection Report,' for Permanent Alternate Repair Criteria," dated March 20, 2012
  - 2) Letter from M. Mahoney (U. S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Byron Station, Unit Nos. 1 and 2, and Braidwood Station, Units 1 and 2 – Request for Additional Information Related to License Amendment Request for Revise Technical Specifications 5.5.9 and 5.6.9, for Permanent Alternate Repair Criteria (TAC Nos. ME8296, ME8297, ME8298, and ME8299)," dated August 1, 2012
  - 3) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Additional Information Supporting License Amendment Request to Revise Technical Specifications (TS) 5.5.9, 'Steam Generator (SG) Program,' and TS 5.6.9, 'Steam Generator (SG) Tube Inspection Report,' for Permanent Alternate Repair Criteria," dated August 14, 2012

In Reference 1, Exelon Generation Company, LLC, (EGC) requested a license amendment to revise Technical Specifications (TS) 5.5.9, "Steam Generator (SG) Program," and TS 5.6.9, "Steam Generator (SG) Tube Inspection Report," for Braidwood, Units 1 and 2, and Byron, Units 1 and 2. The proposed changes would establish permanent alternate repair criteria for portions of the steam generator tubes within the tubesheet of the SGs for Braidwood Unit 2 and Byron Unit 2.

In Reference 2, the U. S. Nuclear Regulatory Commission (NRC) requested additional information to complete its review of the proposed license amendment request. EGC met with the NRC on July 20, 2012, via teleconference to discuss aspects of the referenced submittal. Additional teleconferences were held on July 23 and 24, 2012. EGC provided Reference 3 to address feedback and clarifying questions provided during the teleconferences.

On August 21, 2012, the NRC requested that one additional TS be provided beyond what was provided in Reference 3 (i.e., TS 3.4.19, "SG Tube Integrity"). EGC is providing this supplement to address that request. Attachments 1 and 2 provide revised marked-up TS pages for the Braidwood and Byron Stations, respectively. The proposed TS changes provided in Attachments 1 and 2 supersede the changes previously provided to the NRC in References 1 and 3.

EGC has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration that were previously provided to the NRC in Attachment 1 of Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), a copy of this letter and its attachment are being provided to the designated State of Illinois official.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of August 2012.

Respectfully,



David M. Gullott  
Manager – Licensing  
Exelon Generation Company, LLC

Attachments:

- 1) Proposed Technical Specifications Changes for Braidwood Station, Units 1 and 2
- 2) Proposed Technical Specifications Changes for Byron Station, Units 1 and 2

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cc: NRC Regional Administrator, Region III  
NRC Senior Resident Inspector, Braidwood Station  
NRC Senior Resident Inspector, Byron Station  
NRR Project Manager – Braidwood and Byron Stations

**ATTACHMENT 1**  
**Proposed Technical Specifications Changes for Braidwood Station, Units 1 and 2**

**Braidwood Station, Units 1 and 2**  
**Facility Operating License Nos. NPF-72 and NPF-77**

**Mark-up of Technical Specifications Pages**

3.4.19-1  
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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.19 Steam Generator (SG) Tube Integrity

LCO 3.4.19 SG tube integrity shall be maintained.

AND

All SG tubes satisfying the tube repair criteria shall be plugged ~~or repaired~~ in accordance with the Steam Generator Program.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each SG tube.  
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| CONDITION  | REQUIRED ACTION  | COMPLETION TIME  |
|--|--|--|
| A. One or more SG tubes satisfying the tube repair criteria and not plugged <del>or repaired</del> in accordance with the Steam Generator Program. | A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection. | 7 days   |
|  | <u>AND</u><br>A.2 Plug <del>or repair</del> the affected tube(s) in accordance with the Steam Generator Program.       | Prior to entering MODE 4 following the next refueling outage or SG tube inspection |
| B. Required Action and associated Completion Time of Condition A not met.<br><br><u>OR</u><br>SG tube integrity not maintained.                    | B.1 Be in MODE 3.  | 6 hours  |
|  | <u>AND</u><br>B.2 Be in MODE 5.  | 36 hours   |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE |  | FREQUENCY   |
|--------------|--|---|
| SR 3.4.19.1  | Verify SG tube integrity in accordance with the Steam Generator Program.   | In accordance with the Steam Generator Program          |
| SR 3.4.19.2  | Verify that each inspected SG tube that satisfies the tube repair criteria is plugged <del>or repaired</del> in accordance with the Steam Generator Program. | Prior to entering MODE 4 following a SG tube inspection |

5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging ~~or repair~~ of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are ~~inspected, plugged, or repaired~~ to confirm that the performance criteria are being met.

inspected or plugged

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All inservice 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.

5.5 Programs and Manuals

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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 a total of 1 gpm for all SGs.
  3. The operational LEAKAGE performance criteria is specified in LCO 3.4.13, "RCS Operational LEAKAGE."
- c. Provisions for SG tube repair criteria.

1. Tubes found by inservice inspection to contain flaws ~~in a non-sleeved region~~ with a depth equal to or exceeding 40% of the nominal wall thickness shall be plugged ~~or repaired~~. The following alternate tube repair criteria shall be applied as an alternative to the 40% depth based criteria:

14.01

~~For Unit 2 during Refueling Outage 15 and the subsequent operating cycle, tubes with service-induced flaws located greater than 16.95 inches below the top of the tubesheet do not require plugging or repair. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 16.95 inches below the top of the tubesheet shall be plugged or repaired upon detection.~~

- 14.01
2. ~~Sleeves found by inservice inspection to contain flaws with a depth equal to or exceeding the following percentages of the nominal sleeve wall thickness shall be plugged:~~
    - i. ~~For Unit 2 only, TIG welded sleeves (per TS 5.5.9.f.2.i): 32%~~
  3. ~~Tubes with a flaw in a sleeve to tube joint that occurs in the sleeve or in the original tube wall of the joint shall be plugged.~~



5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program (continued)

- 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. For Unit 2 during Refueling Outage 15 and the subsequent operating cycle, portions of the tube below 16.95 inches from the top of the tubesheet are excluded from this requirement.

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 Unit 1 tubes at sequential periods of 144, 108, 72, 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 addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

Inspect 100% of the Unit 2 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 addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

3. For Unit 1, if crack indications are found in any SG tube, then the next inspection for 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). For Unit 2 ~~during Refueling Outage 15 and the subsequent operating cycle,~~ if crack indications are found in any SG tube from ~~16.95 inches below the top of the~~ 14.01 tubesheet on the hot leg side to ~~16.95 inches below~~ 14.01 the top of the tubesheet on the cold leg side, then the next inspection for 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.

- e. Provisions for monitoring operational primary to secondary LEAKAGE.
- ~~f. Provisions for SG tube repair methods. Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair.~~
- ~~1. There are no approved tube repair methods for the Unit 1 SGs.~~
- ~~2. All acceptable repair methods for the Unit 2 SGs are listed below.~~
- ~~i. TIG welded sleeving as described in ABB Combustion Engineering Inc., Technical Reports: Licensing Report CEN 621-P, Revision 00, "Commonwealth Edison Byron and Braidwood Unit 1 and 2 Steam Generators Tube Repair Using Leak Tight Sleeves, FINAL REPORT," April 1995; and Licensing Report CEN 627-P, "Operating Performance of the ABB CENO Steam Generator Tube Sleeve for Use at Commonwealth Edison Byron and Braidwood Units 1 and 2," January 1996; subject to the limitations and restrictions as noted by the NRC Staff.~~

PAGE INCLUDED FOR INFORMATION ONLY  
NO CHANGES

Programs and Manuals  
5.5

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## 5.6 Reporting Requirements

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### 5.6.8 Tendon Surveillance Report

Any abnormal degradation of the containment structure detected during the tests required by the Pre-Stressed Concrete Containment Tendon Surveillance Program shall be reported in the Inservice Inspection Summary Report in accordance with 10 CFR 50.55a and ASME Section XI.

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### 5.6.9 Steam Generator (SG) 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 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 ~~or repaired~~ during the inspection outage for each active degradation mechanism,
- f. Total number and percentage of tubes plugged ~~or repaired~~ to date,
- g. The results of condition monitoring, including the results of tube pulls and in-situ testing,
- h. The effective plugging percentage for all plugging and tube repairs in each SG,
- i. Repair method utilized and the number of tubes repaired by each repair method,

5.6 Reporting Requirements

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5.6.9 Steam Generator (SG) Tube Inspection Report (continued)

- j. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 15 (and any inspections performed in the subsequent operating cycle)~~, the operational primary to secondary leakage rate observed (greater than three gallons per day) in each steam generator (if it is not practical to assign the leakage to an individual steam generator, the entire primary to secondary leakage should be conservatively assumed to be from one steam generator) during the cycle preceding the inspection which is the subject of the report, ~~and~~
  
- k. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 15 (and any inspections performed in the subsequent operating cycle)~~, the calculated accident induced leakage rate from the portion of the tubes below 16.95 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 3.11 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined, and
  
- l. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 15 (and any inspections performed in the subsequent operating cycle)~~, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

14.01

**ATTACHMENT 2**  
**Proposed Technical Specifications Changes for Byron Station, Units 1 and 2**

**Byron Station, Units 1 and 2**

**Facility Operating License Nos. NPF-37 and NPF-66**

**Mark-up of Technical Specifications Pages**

3.4.19-1

3.4.19-2

5.5-7

5.5-8

5.5-9

5.5-10

5.5-11

5.6-6

5.6-7

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.19 Steam Generator (SG) Tube Integrity

LC0 3.4.19 SG tube integrity shall be maintained.

AND

All SG tubes satisfying the tube repair criteria shall be plugged ~~or repaired~~ in accordance with the Steam Generator Program.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each SG tube.  
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| CONDITION  | REQUIRED ACTION  | COMPLETION TIME  |
|--|--|--|
| A. One or more SG tubes satisfying the tube repair criteria and not plugged <del>or repaired</del> in accordance with the Steam Generator Program. | A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection. | 7 days   |
|  | <u>AND</u><br>A.2 Plug <del>or repair</del> the affected tube(s) in accordance with the Steam Generator Program.       | Prior to entering MODE 4 following the next refueling outage or SG tube inspection |
| B. Required Action and associated Completion Time of Condition A not met.<br><br><u>OR</u><br>SG tube integrity not maintained.                    | B.1 Be in MODE 3.  | 6 hours  |
|  | <u>AND</u><br>B.2 Be in MODE 5.  | 36 hours   |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE |  | FREQUENCY   |
|--------------|--|---|
| SR 3.4.19.1  | Verify SG tube integrity in accordance with the Steam Generator Program.   | In accordance with the Steam Generator Program          |
| SR 3.4.19.2  | Verify that each inspected SG tube that satisfies the tube repair criteria is plugged <del>or repaired</del> in accordance with the Steam Generator Program. | Prior to entering MODE 4 following a SG tube inspection |



5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging ~~or repair~~ of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected, plugged, ~~or repaired~~ to confirm that the performance criteria are being met.

inspected or plugged

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: 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.

5.5 Programs and Manuals

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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 a total of 1 gpm for all SGs.
  3. The operational LEAKAGE performance criteria is specified in LCO 3.4.13, "RCS Operational LEAKAGE."
- c. Provisions for SG tube repair criteria.
1. Tubes found by inservice inspection to contain flaws ~~in a non-sleeved region with a depth equal to or exceeding 40% of the nominal wall thickness shall be plugged or repaired.~~ The following alternate tube repair criteria shall be applied as an alternative to the 40% depth based criteria:
    - For Unit 2 ~~during Refueling Outage 16 and the subsequent operating cycle,~~ tubes with service-induced flaws located greater than ~~16.95~~ inches below the top of the tubesheet do not require ~~plugging or repair.~~ Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to ~~16.95~~ inches below the top of the tubesheet shall be ~~plugged or repaired~~ upon detection. 14.01
  2. ~~Sleeves found by inservice inspection to contain flaws with a depth equal to or exceeding the following percentages of the nominal sleeve wall thickness shall be plugged:~~
    - i. ~~For Unit 2 only, TIG welded sleeves (per TS 5.5.9.f.2.i): 32%~~
  3. ~~Tubes with a flaw in a sleeve to tube joint that occurs in the sleeve or in the original tube wall of the joint shall be plugged.~~

5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program (continued)

- 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. For Unit 2 ~~during Refueling Outage 16 and the subsequent operating cycle,~~ portions of the tube below ~~16.95~~ inches from the top of the tubesheet are excluded from this requirement.

14.01

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 Unit 1 tubes at sequential periods of 144, 108, 72, 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 addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program (continued)

Inspect 100% of the Unit 2 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 addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

3. For Unit 1, if crack indications are found in any SG tube, then the next inspection for 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). For Unit 2 ~~during Refueling Outage 16 and the subsequent operating cycle,~~ if crack indications are found in any SG tube from ~~16.95~~ inches below the top of the tubesheet on the hot leg side to ~~16.95~~ inches below the top of the tubesheet on the cold leg side, then the next inspection for 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).

14.01

14.01

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.

5.5 Programs and Manuals

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5.5.9 Steam Generator (SG) Program (continued)

- e. Provisions for monitoring operational primary to secondary LEAKAGE.
- ~~f. Provisions for SG tube repair methods. Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair.~~
  - ~~1. There are no approved tube repair methods for the Unit 1 SGs.~~
  - ~~2. All acceptable repair methods for the Unit 2 SGs are listed below.~~
    - ~~i. TIG welded sleeving as described in ABB Combustion Engineering Inc., Technical Reports: Licensing Report CEN-621-P, Revision 00, "Commonwealth Edison Byron and Braidwood Unit 1 and 2 Steam Generators Tube Repair Using Leak Tight Sleeves, FINAL REPORT," April 1995; and Licensing Report CEN-627-P, "Operating Performance of the ABB CENO Steam Generator Tube Sleeve for Use at Commonwealth Edison Byron and Braidwood Units 1 and 2," January 1996; subject to the limitations and restrictions as noted by the NRC Staff.~~

## 5.6 Reporting Requirements

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### 5.6.8 Tendon Surveillance Report

Any abnormal degradation of the containment structure detected during the tests required by the Pre-Stressed Concrete Containment Tendon Surveillance Program shall be reported in the Inservice Inspection Summary Report in accordance with 10 CFR 50.55a and ASME Section XI.

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### 5.6.9 Steam Generator (SG) 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 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 ~~or repaired~~ during the inspection outage for each active degradation mechanism,
- f. Total number and percentage of tubes plugged ~~or repaired~~ to date,
- g. The results of condition monitoring, including the results of tube pulls and in-situ testing,
- h. The effective plugging percentage for all plugging and tube repairs in each SG, and
- i. Repair method utilized and the number of tubes repaired by each repair method.

5.6 Reporting Requirements

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5.6.9 Steam Generator (SG) Tube Inspection Report (continued)

- j. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 16 (and any inspections performed in the subsequent operating cycle)~~, the operational primary to secondary leakage rate observed (greater than three gallons per day) in each steam generator (if it is not practical to assign the leakage to an individual steam generator, the entire primary to secondary leakage should be conservatively assumed to be from one steam generator) during the cycle preceding the inspection which is the subject of the report, and
- k. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 16 (and any inspections performed in the subsequent operating cycle)~~, the calculated accident induced leakage rate from the portion of the tubes below 16.95 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 3.11 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined, and
- l. For Unit 2 ~~following completion of an inspection performed in Refueling Outage 16 (and any inspections performed in the subsequent operating cycle)~~, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

14.01