Dominion Resources Services, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060

Dominion

October 29, 2004

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
11555 Rockville Pike
Rockville, Maryland 20852

Serial No.: 04-540
NL&OS/TJS Rev 0
Docket Nos.: 50-338/339
50-280/281
50-336/423
License Nos.: NPF-4/7
DPR-32/37
DPR-65
NPF-49

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
DOMINION NUCLEAR CONNECTICUT, INC. (DNC)
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNITS 1 AND 2
MILLSTONE POWER STATION UNITS 2 AND 3
SIXTY DAY RESPONSE TO NRC GENERIC LETTER 2004-01
REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS

In a letter dated August 30, 2004 the NRC issued NRC Generic Letter 2004-01, "Requirements for Steam Generator Tube Inspections." The generic letter: 1) advises PWR addressees that the NRC's interpretation of the technical specification (TS) requirements in conjunction with 10 CFR Part 50, Appendix B, raises questions as to whether certain licensee steam generator (SG) tube inspection practices ensure compliance with these requirements, 2) requests PWR addressees to provide the NRC with a description of the tube inspections performed at their plants, including an assessment of whether these inspections ensure compliance with the TS requirements in conjunction with 10 CFR Part 50, Appendix B, 3) requests PWR addressees who conclude that they are not in compliance with the SG tube inspection requirements contained in their TS in conjunction with 10 CFR Part 50, Appendix B, to propose plans for coming into compliance with these requirements, 4) requests PWR addressees to submit a tube structural and leakage integrity safety assessment that addresses any differences between their practices and the NRC's position regarding the requirements of the TS in conjunction with 10 CFR Part 50, Appendix B, and 5) requests PWR addressees to provide a written response to the NRC in accordance with the provisions of 10 CFR 50.54(f).

Dominion and DNC have concluded that the SG inspections conducted at all six of the PWRs covered by this response are in compliance with their respective TS requirements in conjunction with 10 CFR Part 50, Appendix B.

Attachment 1 of this letter provides the requested description of the last SG tube inspections performed at North Anna Power Station Units 1 and 2. Similarly, Attachment 2 provides the requested response for Surry Power Station Units 1 and 2. Attachments 3 and 4 provide the requested response for Millstone Power Station Units 2 and 3, respectively. Included in all four attachments are assessments of how these inspections ensure compliance with the respective TS requirements in conjunction with 10 CFR Part 50, Appendix B.

Should you have any questions regarding Dominion's and/or DNC's responses to Generic Letter 2004-01, please contact Mr. Thomas Szymanski at (804) 273-3065.

Very truly yours,

William R. Matthews
Senior Vice President – Nuclear Operations
Dominion Nuclear Connecticut, Inc.
Virginia Electric and Power Company

Attachments (4)

Commitments made by this letter: None

cc U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

U.S. Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Suite 23 T85
Atlanta, Georgia 30303-8931

Mr. N. P. Garrett
NRC Senior Resident Inspector
Surry Power Station

Mr. M. T. Widmann
NRC Senior Resident Inspector
North Anna Power Station

Mr. S. M. Schneider
NRC Senior Resident Inspector
Millstone Power Station

Mr. S. R. Monarque
NRC Project Manager
North Anna Power Station, Surry Power Station

Mr. V. Nerses
NRC Senior Project Manager
Millstone Power Station Units 2&3

Mr. J. E. Reasor, Jr.
Old Dominion Electric Cooperative
Innsbrook Corporate Center, Suite 300
4201 Dominion Blvd.
Glen Allen, Virginia 23060

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by William R. Matthews, who is Senior Vice President - Nuclear Operations of Virginia Electric & Power Company and Dominion Nuclear Connecticut, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of those companies, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 29TH day of October, 2004.

My Commission Expires: May 31, 2006.

Vicki L. Hull
Notary Public

SEAL

ATTACHMENT 1

SIXTY DAY RESPONSE TO NRC GENERIC LETTER 2004-01 REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS NORTH ANNA POWER STATION UNITS 1 AND 2

VIRGINIA ELECTRIC AND POWER COMPANY

Attachment 1 – North Anna Power Station Units 1 and 2
Response to NRC Generic Letter 2004-01:
Requirements for Steam Generator Tube Inspections

Within 60 days of the date of this generic letter, addressees were requested to provide the following information to the NRC.

1. *Addressees should provide a description of the SG tube inspections performed at their plant during the last inspection. In addition, if they are not using SG tube inspection methods whose capabilities are consistent with the NRC's position, addressees should provide an assessment of how the tube inspections performed at their plant meet the inspection requirements of the TS in conjunction with Criteria IX and XI of 10CFR Part 50, Appendix B, and corrective action taken in accordance with Appendix B, Criterion XVI. This assessment should also address whether the tube inspection practices are capable of detecting flaws of any type that may potentially be present along the length of the tube required to be inspected and that may exceed the applicable tube repair criteria.*

   North Anna Units 1 and 2 Response:

   Steam generator tube inspections performed at North Anna are consistent with the NRC position.

   Each North Anna unit has three Westinghouse Model 54-F replacement steam generators. The tubing material in each of the steam generators is Alloy 690 thermally treated. In addition, the first eight rows had the U-bend area stress relieved after bending during the fabrication process. The tubes are fully hydraulically expanded into the tube sheet. The tube support plate configuration includes four broached flow hole openings around each tube, i.e. quatrefoil flow design, and the support plates are fabricated from stainless steel. Additional configuration and layout information is available in Dominion's annual steam generator reports to the NRC.

   Dominion uses tube inspection methods that are capable of detecting flaw types that may be present. Prior to each inspection, a degradation assessment, which includes operating experience, is performed to identify degradation mechanisms that may be present, and a technique validation assessment is performed to verify that the eddy current techniques are capable of detecting those flaw types identified in the degradation assessment.

   <u>North Anna Unit 1:</u>
   The following steam generator tube inspections were performed at North Anna Unit 1 during the refueling outage completed fall 2004. This scope applies to one of three steam generators with the "C" generator having been due in the inspection sequence.

   - 100% full-length bobbin inspection (except Row 1 U-bends)

- 20% hot leg expansion transition inspection, + and – 3 inches, with the plus point rotating coil probe which focused on all tubes in the sludge zone area, peripheral and tubelane area tubes, and randomly selected tubes outside the sludge zone area.
- 100% inspection of small radius (Row 1) U-bends with the plus point rotating coil probe
- Special interest inspection of hot and cold leg tube straight length and U-bend area dents (DNT) > 2 volts with the plus point rotating coil probe was performed. This sample set, approximately 27% (31 locations), was comprised of those DNT and or bulge signals not meeting a voltage and/or phase change criteria (3 locations) plus a remaining population of "no change" selected signals.
- Plus point examination of "I-code" indications that were not resolved after history review

None of the inspections performed to date have revealed any evidence of inter-granular attack, stress corrosion cracking, or volumetric wear indications at the anti-vibration bar contact points. Additional details of past inspections have been provided in each year's respective annual report for steam generator inspections.

North Anna Unit 2:

The following steam generator tube inspections were performed at North Anna Unit 2 during the refueling outage completed fall 2002. This scope applies to one of three steam generators with the "A" generator having been due in the inspection sequence.

- 60% full-length bobbin inspection (except Row 1 U-bends) was completed. Sample set consisted of repeat inspection of 50% of those tubes previously inspected at the baseline and an inspection of an additional 10% of the tubes inspected in 1998 focusing on the peripheral and tubelane areas and other random locations.
- Routine base scope 20% hot leg expansion transition inspection, + and – 3 inches, with the plus point rotating coil probe which focused on all tubes in the sludge zone area and selected tubes outside this area
- 100% inspection of small radius (Row 1) U-bends with the plus point rotating coil probe
- Special interest inspection of hot and cold leg tube straight length and U-bend area dents (DNT) > 2 volts with the plus point rotating coil probe was performed. This sample set was comprised of those DNT signals not meeting voltage and/or phase change criteria plus a remaining population of "no change" selected signals. Since only four DNT signals were identified, they were all inspected with the plus point rotating coil probe.
- Plus point examination of "I-code" indications that were not resolved after history review

None of the inspections performed to date have revealed any evidence of inter-granular attack, stress corrosion cracking, or volumetric wear indications at the anti-vibration bar contact points. Additional details of past inspections have been provided in each year's respective annual report for steam generator inspections.

2. *If addressees conclude that full compliance with the TS in conjunction with Criteria IX, XI and XVI of 10 CFR Part 50, Appendix B, requires corrective action, they should discuss their proposed corrective actions (e.g., changing inspection practices consistent with the NRC's position or submitting a TS amendment request with the associated safety basis for limiting the inspections) to achieve full compliance. If addressees choose to change their TS, the staff has included in the Attachment suggested changes to the TS definitions for a tube inspection and for plugging limits to show what may be acceptable to the staff in cases where the tubes are expanded for the full depth of the tube sheet and where the extent of the inspection in the tube sheet region is limited.*

   North Anna Units 1 and 2 Response:

   Steam generator tube inspections performed at North Anna are consistent with the NRC position. Therefore, this question does not apply.

3. *For plants where SG tube inspections have not been or are not being performed consistent with the NRC's position on the requirements in the TS in conjunction with Criteria IX, XI, and XVI of 10 CFR Part 50, Appendix B, the licensee should submit a safety assessment (i.e., a justification for continued operation based on maintaining tube structural and leakage integrity) that addresses any differences between the licensee's inspection practices and those called for by the NRC's position. Safety assessments should be submitted for all areas of the tube required to be inspected by the TS, where flaws are not being used, and should include the basis for not employing such inspection techniques. The assessment should include an evaluation of (1) whether the inspection practices rely on an acceptance standard (e.g., cracks located at least a minimum distance of x below the top of tube sheet, even if these cracks cause complete severance of the tube) which is different from the TS acceptance standards (i.e., the tube plugging limits or repair criteria), and (2) whether the safety assessment constitutes a change to the "method of evaluation" (as defined in 10 CFR 50.59) for establishing the structural and leakage integrity of the joint. If the safety assessment constitutes a change to the method of evaluation under 10 CFR 50.59, the licensee should determine whether a license amendment is necessary pursuant to that regulation.*

   North Anna Units 1 and 2 Response:

   Steam generator tube inspections performed at North Anna are consistent with the NRC position. Therefore, this question does not apply.

ATTACHMENT 2

SIXTY DAY RESPONSE TO NRC GENERIC LETTER 2004-01
REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS
SURRY POWER STATION UNITS 1 AND 2

VIRGINIA ELECTRIC AND POWER COMPANY

Attachment 2 – Surry Power Station Units 1 and 2
Response to NRC Generic Letter 2004-01:
Requirements for Steam Generator Tube Inspections

Within 60 days of the date of this generic letter, addressees were requested to provide the following information to the NRC.

1. *Addressees should provide a description of the SG tube inspections performed at their plant during the last inspection. In addition, if they are not using SG tube inspection methods whose capabilities are consistent with the NRC's position, addressees should provide an assessment of how the tube inspections performed at their plant meet the inspection requirements of the TS in conjunction with Criteria IX and XI of 10CFR Part 50, Appendix B, and corrective action taken in accordance with Appendix B, Criterion XVI. This assessment should also address whether the tube inspection practices are capable of detecting flaws of any type that may potentially be present along the length of the tube required to be inspected and that may exceed the applicable tube repair criteria.*

Surry Units 1 and 2 Response:

Steam generator tube inspections performed at Surry are consistent with the NRC position.

Each Surry unit has three Westinghouse Model 51-F replacement steam generators. The tubing material in each of the steam generators is Alloy 600 thermally treated. In addition, the first eight rows had the U-bend area stress relieved after bending during the fabrication process. The tubes are fully hydraulically expanded into the tube sheet. The tube support plate configuration includes four broached flow hole openings around each tube, i.e. quatrefoil flow design, and the support plates are fabricated from stainless steel. Additional configuration and layout information is available in Dominion's annual steam generator reports to the NRC.

Dominion uses tube inspection methods that are capable of detecting flaw types that may be present. Prior to each inspection, a degradation assessment, which includes operating experience, is performed to identify degradation mechanisms that may be present, and a technique validation assessment is performed to verify that the eddy current techniques are capable of detecting those flaw types identified in the degradation assessment.

Surry Unit 1:
The following steam generator tube inspections at Surry Unit 1 were performed during the refueling outage completed spring 2003. This scope applies to one of three steam generators with the "B" generator having been due in the inspection sequence.

- 100% full length bobbin inspection (except Row 1 U-bends)

- 20% hot leg expansion transition inspection, + and – 3 inches, with the plus point rotating coil probe which focused on tubes in the sludge zone area and peripheral area tubes
- 100% inspection of small radius (Row 1) U-bends with the plus point rotating coil probe
- An approximate 28% sample inspection of hot and cold leg tube straight length and U-bend area dents (DNT) > 2 volts with the plus point rotating coil probe was performed. This sample set was comprised of those DNT signals not meeting voltage and/or phase change criteria plus a remaining population of "no change" selected signals.
- Plus point examination of "I-code" indications that were not resolved after history review
- Special interest sample inspections of 20 locations with the plus point rotating coil probe of manufacturing anomalies, i.e. drilling or machining imperfections and related tube bulges, within the tubesheet were conducted. These manufacturing record reviews were conducted in preparation for outage inspections to investigate additional areas that may provide unusual stress conditions. Forty-nine such locations were identified during fabrication spread between the hot leg and the cold leg that did not pass the screening criterion of 11 mils diametral bulge. Although the manufacturing record indicates remediation by local shot peening, follow-up sample inspections were deemed appropriate. No findings resulted. The record does not show similar indications for the "A" and "C" steam generators.

A one-time inspection expansion was conducted on the "C" steam generator Row 1 top of tubesheet area to evaluate the sludge lance monorail tube damage incident that occurred during a previous outage. Findings on the "B" steam generator warranted a special investigation of the generator that had not previously been inspected ("C") since the damage. Additional details were provided in the annual report for 2003 steam generator inspections.

None of the inspections performed to date have revealed any evidence of inter-granular attack or stress corrosion cracking. Additional details of past inspections have been provided in each year's respective annual report for steam generator inspections.

Surry Unit 2:

The following steam generator tube inspections at Surry Unit 2 were performed during the refueling outage completed fall 2003. This scope applies to one of three steam generators with the "B" generator having been due in the inspection sequence.

- 100% full length bobbin inspection (except R1 U-bends)
- Routine base scope 20% hot leg expansion transition inspection, + and – 3 inches, with the plus point rotating coil probe which focused on tubes in the sludge zone area and peripheral area tubes
- A supplemental one-time baseline inspection effort was conducted to acquire rotating coil data on tubes not previously having a rotating coil inspection in the

hot leg top of tubesheet area. This comprised some 2380 tubes that included the planned 20% base scope activity.

- 100% inspection of small radius (Row 1) U-bend with the plus point rotating coil probe
- An approximate 25% sample inspection of hot and cold leg tube straight length and U-bend area dents (DNT) > 2 volts with the plus point rotating coil probe was performed. This sample set was comprised of those DNT signals not meeting voltage and/or phase change criteria plus a remaining population of "no change" selected signals.
- Plus point examination of "I-code" indications that were not resolved after history review
- Special interest inspection was conducted on incompletely expanded tubes within the tubesheet using rotating coil techniques. These four tubes in addition to being inspected with the bobbin coil were tested with a plus point rotating probe within the full extent of the tubesheet with no findings of degradation. The two previous bobbin inspections in 1993 and 1997 indicated no degradation condition.

  Note: Review of the manufacturing record for the Unit 2 steam generators does not identify gouge and/or bulge indications within the tubesheet of similar extent as those noted above for Unit 1.

None of the inspections performed to date have revealed any evidence of inter-granular attack or stress corrosion cracking. Additional details of past inspections have been provided in each year's respective annual report for steam generator inspections.

2. *If addressees conclude that full compliance with the TS in conjunction with Criteria IX, XI and XVI of 10 CFR Part 50, Appendix B, requires corrective action, they should discuss their proposed corrective actions (e.g., changing inspection practices consistent with the NRC's position or submitting a TS amendment request with the associated safety basis for limiting the inspections) to achieve full compliance. If addressees choose to change their TS, the staff has included in the Attachment suggested changes to the TS definitions for a tube inspection and for plugging limits to show what may be acceptable to the staff in cases where the tubes are expanded for the full depth of the tube sheet and where the extent of the inspection in the tube sheet region is limited.*

   Surry Units 1 and 2 Response:

   Steam Generator tube inspections performed at Surry are consistent with the NRC position. Therefore, this question does not apply.

3. *For plants where SG tube inspections have not been or are not being performed consistent with the NRC's position on the requirements in the TS in conjunction with Criteria IX, XI, and XVI of 10 CFR Part 50, Appendix B, the licensee should submit a safety assessment (i.e., a justification for continued operation based on maintaining tube structural and leakage integrity) that addresses any differences between the*

licensee's inspection practices and those called for by the NRC's position. Safety assessments should be submitted for all areas of the tube required to be inspected by the TS, where flaws are not being used, and should include the basis for not employing such inspection techniques. The assessment should include an evaluation of (1) whether the inspection practices rely on an acceptance standard (e.g., cracks located at least a minimum distance of x below the top of tube sheet, even if these cracks cause complete severance of the tube) which is different from the TS acceptance standards (i.e., the tube plugging limits or repair criteria), and (2) whether the safety assessment constitutes a change to the "method of evaluation" (as defined in 10 CFR 50.59) for establishing the structural and leakage integrity of the joint. If the safety assessment constitutes a change to the method of evaluation under 10 CFR 50.59, the licensee should determine whether a license amendment is necessary pursuant to that regulation.

Surry Units 1 and 2 Response:

Steam generator tube inspections performed at Surry are consistent with the NRC position. Therefore, this question does not apply.

ATTACHMENT 3

SIXTY DAY RESPONSE TO NRC GENERIC LETTER 2004-01 REQUIRMENTS FOR STEAM GENERATOR TUBE INSPECTIONS MILLSTONE POWER STATION UNIT 2

DOMINION NUCLEAR CONNECTICUT, INC

Attachment 3 – Millstone Power Station Unit 2
Response to NRC Generic Letter 2004-01:
Requirements for Steam Generator Tube Inspections

Within 60 days of the date of this generic letter, addressees are requested to provide the following information to the NRC.

1. *Addressees should provide a description of the SG tube inspections performed at their plant during the last inspection. In addition, if they are not using SG tube inspection methods whose capabilities are consistent with the NRC's position, addressees should provide an assessment of how the tube inspections performed at their plant meet the inspection requirements of the TS in conjunction with Criteria IX and XI of 10CFR Part 50, Appendix B, and corrective action taken in accordance with Appendix B, Criterion XVI. This assessment should also address whether the tube inspection practices are capable of detecting flaws of any type that may potentially be present along the length of the tube required to be inspected and that may exceed the applicable tube repair criteria.*

Millstone Power Station Unit 2 Response:

Steam generator tube inspections performed at Millstone Power Station Unit 2 (MPS2) are consistent with the NRC position.

MPS2 has two Babcock and Wilcox steam generators. The tubing material in each of the steam generators is Inconel Alloy 690 thermally treated. In addition, the first eight rows had the U-bend area stress relieved after bending. Rows one, two, and three are offset resulting in an increased U-bend radius. The minimum U-bend radius occurs in Row 3. The tubes are fully hydraulically expanded into the tube sheet. Additional configuration and layout information is available in Dominion Nuclear Connecticut's (DNC) MPS Annual Operating Reports to the NRC.

DNC performed the following steam generator tube inspections at MPS2 during the last inspection completed during the fall 2003. This scope applies to one of two steam generators:

- 100% of all in-service tubes, full length bobbin inspection
- 1.6% hot leg expansion transition, + and – 3 inches with the MRPC plus-point probe (50% of the historical sludge pile locations from both steam generators)
- MRPC plus-point examinations (total of 50 tubes) were conducted of previously identified foreign object locations, new foreign object or potential loose part locations, and one tube bounding of these tubes.
- MRPC plus-point examination of all "I-code" indications that were new or not resolved after history review (ten locations)
- MRPC plus-point examination of "I code" indications that were identified during previous inspections (16 locations)

None of the inspections performed to date have revealed any evidence of intergranular attack or stress corrosion cracking. Additional details of past inspections have been provided in each year's respective Annual Operating Report to the NRC.

DNC uses tube inspection methods that are capable of detecting flaw types that may be present. Prior to each inspection, a degradation assessment is performed to identify flaws that may be present, and a technique validation assessment is performed to verify that the eddy current techniques are capable of detecting those flaw types identified in the degradation assessment.

2. *If addressees conclude that full compliance with the TS in conjunction with Criteria IX, XI and XVI of 10 CFR Part 50, Appendix B, requires corrective action, they should discuss their proposed corrective actions (e.g., changing inspection practices consistent with the NRC's position or submitting a TS amendment request with the associated safety basis for limiting the inspections) to achieve full compliance. If addressees choose to change their TS, the staff has included in the Attachment suggested changes to the TS definitions for a tube inspection and for plugging limits to show what may be acceptable to the staff in cases where the tubes are expanded for the full depth of the tube sheet and where the extent of the inspection in the tube sheet region is limited*

Millstone Unit 2 Response:

Steam generator tube inspections performed at MPS2 are consistent with the NRC position. Therefore this question does not apply.

3. *For plants where SG tube inspections have not been or are not being performed consistent with the NRC's position on the requirements in the TS in conjunction with Criteria IX, XI, and XVI of 10 CFR Part 50, Appendix B, the licensee should submit a safety assessment (i.e., a justification for continued operation based on maintaining tube structural and leakage integrity) that addresses any differences between the licensee's inspection practices and those called for by the NRC's position. Safety assessments should be submitted for all areas of the tube required to be inspected by the TS, where flaws are not being used, and should include the basis for not employing such inspection techniques. The assessment should include an evaluation of (1) whether the inspection practices rely on an acceptance standard (e.g., cracks located at least a minimum distance of x below the top of tube sheet, even if these cracks cause complete severance of the tube) which is different from the TS acceptance standards (i.e., the tube plugging limits or repair criteria), and (2) whether the safety assessment constitutes a change to the "method of evaluation" (as defined in 10 CFR 50.59) for establishing the structural and leakage integrity of the joint. If the safety assessment constitutes a change to the method of evaluation under 10 CFR 50.59, the licensee should determine whether a license amendment is necessary pursuant to that regulation.*

Millstone Unit 2 Response:

Steam generator tube inspections performed at MPS2 are consistent with the NRC position. Therefore this question does not apply.

ATTACHMENT 4

SIXTY DAY RESPONSE TO NRC GENERIC LETTER 2004-01 REQUIRMENTS FOR STEAM GENERATOR TUBE INSPECTIONS MILLSTONE POWER STATION UNIT 3

DOMINION NUCLEAR CONNECTICUT, INC

Attachment 4 – Millstone Power Station Unit 3
Response to NRC Generic Letter2004-01:
Requirements for Steam Generator Tube Inspections

Within 60 days of the date of this generic letter, addressees are requested to provide the following information to the NRC.

1. *Addressees should provide a description of the SG tube inspections performed at their plant during the last inspection. In addition, if they are not using SG tube inspection methods whose capabilities are consistent with the NRC's position, addressees should provide an assessment of how the tube inspections performed at their plant meet the inspection requirements of the TS in conjunction with Criteria IX and XI of 10CFR Part 50, Appendix B, and corrective action taken in accordance with Appendix B, Criterion XVI. This assessment should also address whether the tube inspection practices are capable of detecting flaws of any type that may potentially be present along the length of the tube required to be inspected and that may exceed the applicable tube repair criteria.*

   Millstone Power Station Unit 3 Response:

   Steam generator tube inspections performed at Millstone Power Station Unit 3 (MPS3) are consistent with the NRC position.

   MPS3 has four Westinghouse Model F steam generators. The tubing material in each of the steam generators is Inconel Alloy 600 thermally treated. In addition, the first ten rows had the U-bend area stress relieved after bending. The tubes are fully hydraulically expanded into the tube sheet. Additional configuration and layout information is available in Dominion Nuclear Connecticut's (DNC) MPS3 Steam Generator Tube Inservice Inspection Reports to the NRC.

   DNC performed the following steam generator tube inspections at MPS3 during the spring 2004. This scope applies to two of four steam generators:

   - 100% operational tubes full-length bobbin inspection with the exception of the U-bend area of the tubes in Row 1
   - 50% small radius (Row 1 and Row 2) U-bend with the MRPC plus-point probe
   - 50% in-service tubes hot leg expansion transition, + and – 3 inches with the MRPC plus-point probe, and a 20% expansion in one generator which included primarily cold leg expansion transitions
   - MRPC plus-point examination of potential loose part locations (11 tubes) and a one-tube bounding of the tubes that recorded potential loose part signals (38 tubes)

- MRPC plus-point examination of all "I-code" indications that were new or not resolved after history review (309 locations)
- MRPC plus-point examination of "I-code" indications that were identified during previous inspections (five locations, one steam generator only)

None of the inspections performed to date have revealed any evidence of intergranular attack or stress corrosion cracking. Additional details of past inspections have been provided in each refueling outage's respective Steam Generator Tube Inservice Inspection Report.

DNC uses tube inspection methods that are capable of detecting flaw types that may be present. Prior to each inspection, a degradation assessment is performed to identify flaws that may be present, and a technique validation assessment is performed to verify that the eddy current techniques are capable of detecting those flaw types identified in the degradation assessment.

2. *If addressees conclude that full compliance with the TS in conjunction with Criteria IX, XI and XVI of 10 CFR Part 50, Appendix B, requires corrective action, they should discuss their proposed corrective actions (e.g., changing inspection practices consistent with the NRC's position or submitting a TS amendment request with the associated safety basis for limiting the inspections) to achieve full compliance. If addressees choose to change their TS, the staff has included in the Attachment suggested changes to the TS definitions for a tube inspection and for plugging limits to show what may be acceptable to the staff in cases where the tubes are expanded for the full depth of the tube sheet and where the extent of the inspection in the tube sheet region is limited.*

Millstone Unit 3 Response:

Steam generator tube inspections performed at MPS3 are consistent with the NRC position. Therefore this question does not apply.

3. *For plants where SG tube inspections have not been or are not being performed consistent with the NRC's position on the requirements in the TS in conjunction with Criteria IX, XI, and XVI of 10 CFR Part 50, Appendix B, the licensee should submit a safety assessment (i.e., a justification for continued operation based on maintaining tube structural and leakage integrity) that addresses any differences between the licensee's inspection practices and those called for by the NRC's position. Safety assessments should be submitted for all areas of the tube required to be inspected by the TS, where flaws are not being used, and should include the basis for not employing such inspection techniques. The assessment should include an evaluation of (1) whether the inspection practices rely on an acceptance standard (e.g., cracks located at least a minimum distance of x below the top of tube sheet, even if these cracks cause complete severance of the tube) which is different from the TS acceptance standards (i.e., the tube plugging limits or repair criteria), and (2)*

whether the safety assessment constitutes a change to the "method of evaluation" (as defined in 10 CFR 50.59) for establishing the structural and leakage integrity of the joint. If the safety assessment constitutes a change to the method of evaluation under 10 CFR 50.59, the licensee should determine whether a license amendment is necessary pursuant to that regulation.

Millstone Unit 3 Response:

Steam generator tube inspections performed at MPS3 are consistent with the NRC position. Therefore this question does not apply.