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Michael R. Kansler
President

October 27, 2004
NL-04-139

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Subject: Indian Point Nuclear Generating Unit No. 2
Docket No. 50-247
Indian Point Nuclear Generating Unit No. 3
Docket No. 50-286
60-Day Response to Generic Letter 2004-01,
"Requirements for Steam Generator Tube Inspections"

Reference: 1. USNRC Generic Letter 2004-01, "Requirements for Steam Generator Tube Inspections", dated August 30, 2004.

Dear Sir:

On August 30, 2004, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2004-01, "Requirements for Steam Generation Tube Inspections". Attachment 1 to this letter contains the Entergy Nuclear Operations, Inc. (ENO) 60-day response to GL 2004-01 for Indian Point Unit No. 2 and Indian Point Unit No. 3.

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There are no new commitments made in this letter. If you have any questions, please contact Ms. Charlene Faison at 914-272-3378.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 27th day of October, 2004.

Very truly yours,

Michael R. Kansler
President
Entergy Nuclear Operations, Inc.

Attachment: 1. 60-day response to Generic Letter 2004-01

cc: Mr. Patrick D. Milano, Senior Project Manager
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ATTACHMENT 1

60-DAY RESPONSE TO GENERIC LETTER 2004-01
REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS

Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit No. 2
Docket No. 50-247
Indian Point Nuclear Generating Unit No. 3
Docket No. 50-286

Attachment 1

Response to NRC Generic Letter 2004-01:
Requirements for Steam Generator Tube Inspections

Indian Point 2 Response

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.*

   Indian Point 2 Response:

   Steam Generator tube inspections performed at Indian Point 2 are consistent with the NRC's position regarding tube inspections.

   Indian Point 2 has four Westinghouse Model 44F steam generators (SG). The tubing material in each of the steam generators is Inconel Alloy 600 thermally treated. In addition, the first 8 rows had the u-bend area stress relieved after bending. The tubes are fully hydraulically expanded into the tube sheet. The tubes are supported with stainless steel support plates and chrome plated Inconel 600 anti-vibration bars.

   Entergy Nuclear Operations Inc. (ENO) completed the last SG tube inspection at Indian Point 2 on November 17, 2002. The following is a summary of the scope of work performed during that inspection, for each of the four SGs:

   - 100% full length bobbin inspection (except row 1 and 2 U-bends)
   - 20% sample of hot leg expansion transition, + and – 3 inches with the plus point probe
   - 100% of small radius (rows 1 and 2) U-bends with the plus point probe
   - 100% of hot leg straight section dings and dents ≥ 5 volts with the plus point probe
   - Plus point examination of all "I-code" indications that were new or not resolved after history review.
   - 270 peripheral, cold leg tubes at the top of the tubesheet, + and – 3 inches with the plus point probe

ENO uses tube inspection methods at Indian Point 2 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.

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*

Indian Point 2 Response:

Steam Generator tube inspections performed at Indian Point 2 are consistent with the NRC's position regarding tube inspections. 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 10CRF50.59) 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.

Indian Point 2 Response:

Steam Generator tube inspections performed at Indian Point 2 are consistent with the NRC's position regarding tube inspections. Therefore this question does not apply.

Indian Point 3 Response

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.*

Indian Point 3 Response:

Steam Generator tube inspections performed at Indian Point 3 are consistent with the NRC's position regarding tube inspections.

Indian Point 3 has four Westinghouse Model 44F steam generators (SG). 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. The tubes were fully hydraulically expanded into the tube sheet. The tubes are supported with stainless steel support plates and anti-vibration bars.

ENO completed the last SG tube inspection outage at Indian Point 3 on April 17, 2003. The following is a summary of the scope of work performed during that inspection:

Steam Generators 31 and 32 (each):

- 25% sample of full length tubes with bobbin probe (except rows 1 and 2 U-bends).
- 20% sample of hot leg expansion transition, + and – 3 inches with the plus point
- probe.
- 20% sample of small radius (rows 1 and 2) U-bends with the plus point probe.
- 20% sample (from the 25% population of tubes inspected, with bobbin probe) of hot leg straight section dings and dents ≥ 3 volts.
- Plus point examination of all "I-code" indications that were new or not resolved after history review.
- 270 peripheral, cod leg tubes at the top of the tubesheet, + and – 3 inches with the plus point probe.

Steam Generators 33 and 34 (each):

- 25% sample of full length tubes with bobbin probe (except rows 1 and 2 U-bends).
- 30% sample of hot leg expansion transition, + and – 3 inches with the plus point
- probe.
- 100% sample of small radius (rows 1 and 2) U-bends with the plus point probe.
- 20% sample (from the 25% population of tubes inspected, with bobbin probe) of hot leg straight section dings and dents ≥ 5 volts.
- Plus point examination of all "I-code" indications that were new or not resolved after history review.
- 270 peripheral, cod leg tubes at the top of the tubesheet, + and – 3 inches with the plus point probe.

ENO uses tube inspection methods at Indian Point 3 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.

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*

Indian Point 3 Response:

Steam Generator tube inspections performed at Indian Point 3 are consistent with the NRC's position regarding tube inspections. 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 10CRF50.59) 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.

Indian Point 3 Response:

Steam Generator tube inspections performed at Indian Point 3 are consistent with the NRC's position regarding tube inspections. Therefore this question does not apply.