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NL-14-045

April 2, 2014

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: Response to Request for Additional Information Regarding the Steam Generator License Amendment Request to Revise Technical Specification for Permanent Alternate Repair Criteria (TAC NO. MF3369)
Indian Point Unit Number 2
Docket No. 50-247
License No. DPR-26

REFERENCES:
1. NRC Letter to Entergy, Request for Additional Information Regarding the Steam Generator License Amendment Request to Revise Technical Specification for Permanent Alternate Repair Criteria (TAC NO. MF3369), dated March 18, 2014
2. Entergy Letter NL-14-001 to NRC Regarding Proposed License Amendment for Alternate Repair Criteria for Steam Generator Tube Inspection and Repair, dated January 16, 2014

Dear Sir or Madam:

Entergy Nuclear Operations, Inc., (Entergy) is hereby providing the attached response to the NRC request for additional information, Reference 1, associated with the proposed changes to the Indian Point 2 Technical Specifications (TS) in Reference 2. The responses to the request for additional information are provided in Attachment 1 and summarized below.

In response to Request #1, Entergy proposes additional TS changes to those proposed in Reference 2. These changes would reduce the allowable primary to secondary leakage through any one steam generator from 150 gallons per day to 85 gallons per day. The marked up pages for TS 3.4.13, RCS Operational Leakage, are provided in Attachment 2. Also included in Attachment 2 is a marked up page for TS 5.5.7, Steam Generator (SG) Program, which replaces the same page provided in Reference 2.

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NRR

In response to Request #2, a new Regulatory Commitment is made in this submittal. The commitment is contained in Attachment 3 and summarized below:

- Establish administrative operational leakage limits associated with the Alternate Repair Criteria and the 1.75 leakage factor

This new commitment will be administratively controlled under the existing commitment management program.

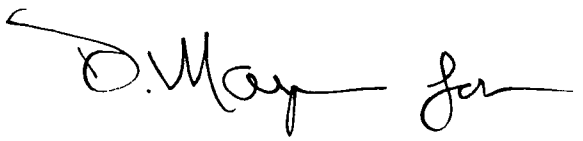
In response to Request #3, Westinghouse provided the information included as Enclosure 1 (proprietary) and Enclosure 2 (non-proprietary). The information proprietary to Westinghouse in Enclosure 1 is supported by an affidavit signed by Westinghouse, the owner of the information, and included as Enclosure 3. The attached affidavit sets forth the basis on which the information may be withheld from public disclosure by the NRC and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR 2.390. Accordingly, it is requested that the information that is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390.

A copy of this response and the associated Attachments is being submitted to the designated New York State official in accordance with 10 CFR 50.91.

If you have any questions or require additional information, please contact Mr. Robert Walpole, Manager, Regulatory Assurance at (914) 254-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 2, 2014.

Sincerely,



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Attachments:
1. Response to Request for Additional Information Regarding the Steam Generator License Amendment Request to Revise Technical Specification for Permanent Alternate Repair Criteria
2. Marked Up Technical Specifications Pages for Proposed Changes for Alternate Repair Criteria for Steam Generator Tube Inspection and Repair
3. List of Regulatory Commitments

Enclosures:
1. LTR-SGMP-14-22 P-Attachment, Revision 0, "Acceptable Value of the Location of the Bottom of the Expansion Transition (BET) for Implementation of H* at Indian Point Unit 2", March 2014 (proprietary)

2. LTR-SGMP-14-22 NP-Attachment, Revision 0, "Acceptable Value of the Location of the Bottom of the Expansion Transition (BET) for Implementation of H* at Indian Point Unit 2", March 2014 (non-proprietary)

3. CAW-14-3930, "Application for Withholding Proprietary Information from Public Disclosure, LTR-SGMP-14-22-P-Attachment, Revision 0, "Acceptable Value of the Location of the Bottom of the Expansion Transition (BET) for Implementation of H* at Indian Point Unit 2" (Proprietary)

cc: Mr. Douglas Pickett, Senior Project Manager, NRC NRR DORL
Mr. William Dean, Regional Administrator, NRC Region 1
NRC Resident Inspectors Office
Mr. Francis J. Murray, Jr., President and CEO, NYSERDA (non-proprietary only)
Ms. Bridget Frymire, New York State Dept. of Public Service (non-proprietary only)

ATTACHMENT 1 TO NL-14-045

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING THE STEAM GENERATOR LICENSE AMENDMENT REQUEST TO REVISE TECHNICAL SPECIFICATION FOR PERMANENT ALTERNATE REPAIR CRITERIA

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET NO. 50-247

Request #1

Please discuss the basis for not including a change to the LCO limit (TS Section 3.4.13), or discuss your plans for submitting a proposed change.

Response to Request #1

The current Technical Specification (TS) limiting condition for operation (LCO) on primary-to-secondary leakage is 150 gallons per day (gpd) through any one Steam Generator (SG). The purpose of this limit is to minimize the frequency of tube ruptures and to ensure that primary-to-secondary leakage does not exceed that assumed in the accident analyses.

For Indian Point Unit 2, the main steam line break (MSLB) accident analysis assumed a leakage of 150 gpd per SG for dose consequences. The technical support document for the proposed license amendment (WCAP-17828, Rev. 0) demonstrates that operational leakage from cracks located at or below the H* distance is expected to increase by a factor of 1.75 during a MSLB. Therefore, if operational leakage from such cracks approaches the 150-gpd LCO limit, the expected leakage under postulated MSLB conditions would be 1.75 X 150 gpd, exceeding the assumptions in the accident analysis.

A change to the LCO limit was not previously included with the License Amendment Request (LAR), as the SG leakage limit was administratively controlled to 75 gpd by Procedure 2-AOP-SF-1, "Steam generator Tube Leak", and would initiate a shutdown if this leak rate was exceeded. In response to Request #1, Entergy proposes to change the LCO limit in TS 3.4.13 and 5.5.7 from 150 gpd to 85 gpd (150/1.75) such that accident analysis leakage assumptions would not be exceeded during a MSLB. Attachment 2 shows the proposed TS changes. The proposed TS change pages provided in Reference 2, are being supplemented by two new change pages 3.4.13-1 and 3.4.13-2, and a replacement page 5.5-7, which replaces the same page submitted in Reference 2. Since these changes are consistent with the technical evaluation performed in Attachment 1 of Reference 2, the no significant hazards consideration of Reference 2 remains valid.

Request #2

All plants receiving a permanent license amendment for H*, have committed to using their plant-specific leakage factor developed in the appropriate WCAP supporting the license amendment request, as shown below:

For the condition monitoring assessment, the component of operational leakage from the prior cycle from below the H distance will be multiplied by a factor of 1.75 and added to the total accident leakage from any other source and compared to the allowable accident induced leakage limit. For the operational assessment, the difference in the leakage between the allowable accident induced leakage and the accident-induced leakage from sources other than the tubesheet expansion region will be divided by 1.75 and compared to the observed operational leakage. An administrative limit will be established to not exceed the calculated value.*

Please discuss your plans for submitting such a commitment in conjunction with your license amendment request.

Response to Request #2

Attachment 3 commits to the above request and will be administratively controlled under the existing commitment management program.

Request #3

The technical supporting document, "Acceptable Value of the Locations of the Bottom of the Expansion Transition (BET) for Implementation of H*" (LTR-SGMP09-111 P-Attachment, Rev. 1), dated September 2010, contains an analysis of BET locations for plants requesting implementation of permanent H* amendments. This document does not contain BET data for IP2.

Please provide the BET information discussed above and assess the acceptability of the BET measurement for each tube for the purposes of supporting the proposed H* distance.

Response to Request #3

Enclosures 1 and 2 contain the proprietary and non-proprietary responses to Request #3. The information proprietary to Westinghouse in Enclosure 1 is supported by an affidavit signed by Westinghouse, the owner of the information, and included as Enclosure 3. The attached affidavit sets forth the basis on which the information may be withheld from public disclosure by the NRC and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR 2.390. Accordingly, it is requested that the information that is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390.

ATTACHMENT 2 TO NL-14-045

MARKED UP TECHNICAL SPECIFICATIONS PAGES FOR PROPOSED CHANGES FOR ALTERNATE REPAIR CRITERIA FOR STEAM GENERATOR TUBE INSPECTION AND REPAIR

Changes indicated by ***Bold/Italics*** for additions and ~~strikeout~~ for deletions

Unit 2 Affected Pages:

3.4.13-1
3.4.13-2
Replacement Page 5.5-7 (replaces page 5.5-7 in NL-14-001)

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET NO. 50-247

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE,

b. 1 gpm unidentified LEAKAGE,

c. 10 gpm identified LEAKAGE, and

d. ~~150~~ ***85*** gallons per day primary to secondary LEAKAGE through any one steam generator (SG).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.13.1	**- NOTES -** 1. Not required to be performed in MODE 3 or 4 until 12 hours of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. Verify RCS Operational LEAKAGE is within limits by performance of RCS water inventory balance.	72 hours
SR 3.4.13.2	**- NOTE -** Not required to be performed until 12 hours after establishment of steady state operation. Verify primary to secondary LEAKAGE is $\leq$ ~~150~~ ***85*** gallons per day through any one SG.	72 hours

5.5 Programs and Manuals

5.5.7 Steam Generator (SG) Program (continued)

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.

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 ~~150~~ ***85*** gpd 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 40% of the nominal tube wall thickness shall be plugged.

The following SG tube alternate plugging criteria shall be applied as an alternative to the preceding criteria.

Tubes with service-induced flaws located greater than 18.9 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 18.9 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 ***18.9 inches below the top of the tubesheet on the hot leg side to 18.9 inches below the top of the tubesheet on the cold leg side,*** ~~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

ATTACHMENT 3 TO NL-14-045

LIST OF REGULATORY COMMITMENTS

REGULATORY COMMITMENT	IMPLEMENT
Indian Point Unit 2 commits to the following: Indian Point Unit 2 will apply a factor of 1.75 to the normal operating leakage associated with the tubesheet expansion region in the condition monitoring and operational assessment. Specifically, for the condition monitoring assessment, the component of leakage from the prior cycle from below the H* distance will be multiplied by a factor of 1.75 and added to the total leakage from any other source and compared to the allowable accident induced leakage limit. For the operational assessment, the difference in the leakage between the allowable leakage and the accident induced leakage from sources other than the tubesheet expansion region will be divided by 1.75 and compared to the observed operational leakage. An administrative limit will be established to not exceed the calculated value.	An administrative operational leakage limit associated with the Alternate Repair Criteria and the 1.75 leakage factor will be established for the refueling outage in which a SG inspection is performed following approval of the License Amendment Request.