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Robert Walpole
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NL-13-143

October 29, 2013

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

SUBJECT: Response to Request for Additional Information Regarding Steam Generator Tube Inservice Inspection Performed During the Spring 2013 Refueling Outage
Indian Point Unit No. 3
Docket No. 50-286
License No. DPR-64

REFERENCE
1. Entergy letter to the NRC, NL-13-032 dated August 15, 2013 regarding Technical Specification 5.6.8 – IP3 Steam Generator Tube Inspection Report - Spring 2013 Refueling Outage
2. NRC letter dated October 24, 2013 Request for Additional Information Regarding Steam Generator Tube Inservice Inspection Performed During the Spring 2013 Refueling Outage (TAC NO. MF2614)

Dear Sir or Madam:

Entergy Nuclear Operations, Inc (Entergy) submitted a report on the 3R17 Steam Generator Tube Inspection in accordance with Technical Specification 5.6.8 (Reference 1). The NRC indicated that additional information was needed to complete the NRC review (Reference 2). The purpose of this letter is to provide that information. Attachment 1 contains the Entergy response to the request for information.

There are no new commitments contained in this letter. If you have any questions or require additional information, please contact me.

Sincerely,

RW/mb/rd

cc next page

A047
NRR

cc: Mr. William Dean, Regional Administrator, NRC Region 1
Mr. Douglas Pickett,, Senior Project Manager, NRC NRR DORL
Mr. Peter Habighorst, Material Control and Accounting Branch, NRC
IPEC NRC Resident Inspector's Office
Mr. Francis J. Murray, President and CEO, NYSERDA
Ms. Bridget Frymire, New York State Department of Public Service

ATTACHMENT 1 TO NL-13-143

Response to Request for Additional Information Regarding the Steam Generator Examination Program Results 2013 Refueling Outage (3R17)

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT 3
DOCKET NO. 50-286

Indian Point Unit 3
Response to Request for Additional Information Regarding
Steam Generator Examination Program Results
2013 Refueling Outage (3R17)

In a letter dated August 15, 2013, Entergy Nuclear Operations, Inc. (Entergy), submitted information pertaining to the 2013 steam generator tube inspections at Indian Point Nuclear Generating Unit No. 3 (Agencywide Documents Access and Management Systems Accession Number [ADAMS] ML 13235A047). These inspections were performed during the Unit No. 3 refueling outage seventeen. The Nuclear Regulatory Commission staff reviewed the information Entergy provided and requested, in a letter dated October 24, 2013, that additional information be provided in order to complete the NRC evaluation. Requests and responses with additional information are as follows:

RAI 1:

The SG tube inspection report states that "no tubes were found with newly-formed degradation." It further states that there are eight small volumetric indications in the steam generator. If these eight tubes were inspected during the 3R 17 outage, please provide the size, location, orientation, and measured sizes of any service induced indications (regardless of whether they are new) including the eight small volumetric indications created in 2001 as a result of sludge lance rail wear.

RAI 1 Response: The eight small volumetric indications noted are not service induced indications and were created in 2001 as a result of sludge lance rail wear.

The eight indications were examined during the 3R17 outage, the size, location, orientation, and measured sizes are shown in Table 1. These small volumetric wear indications were caused by the sludge lance rail system and are traceable to the 2001 inspection.

Table 1

S/G	Tube	Test Type	Voltage	Orientation	Location	Arc	Length	Depth
31	1-8	Bobbin	0.82	ADS	TSC +16.38			
		XP	1.75	VOL	TSC +16.41			
		+Pt	0.26	VOL	BPC -7.18	0.30	0.71	26%
	1-27	Bobbin	0.67	ADS	TSC +16.44			
		XP	1.03	VOL	TSC +16.38			
		+Pt	0.25	VOL	BPC -7.45	0.27	0.66	26%

S/G	Tube	Test Type	Voltage	Orientation	Location	Arc	Length	Depth
	1-65	Bobbin	0.42	ADS	TSC +17.98			
		XP	0.60	VOL	TSC +18.02			
		+Pt	0.11	VOL	BPC -5.68	0.23	0.55	16%
	1-65	Bobbin	0.55	ADS	TSC +16.38			
		XP	1.06	VOL	TSC +16.14			
		+Pt	0.12	VOL	BPC -7.73	0.20	0.92	17%
	1-66	Bobbin	0.57	ADS	TSC +18.08			
		XP	0.42	VOL	TSC +17.85			
		+Pt	0.17	VOL	BPC -5.63	0.24	0.66	21%
34	1-27	Bobbin	0.55	ADS	TSC +18.57			
		XP	1.55	VOL	TSC +18.36			
		+Pt	0.19	VOL	BPC -5.27	0.30	1.21	24%
34	1-66	Bobbin	0.26	ADS	TSC +18.42			
		XP	0.46	VOL	TSC +18.49			
		+Pt	0.10	VOL	BPC -5.03	0.30	1.00	16%
34	1-85	Bobbin	0.33	ADS	TSC +17.01			
		XP	0.43	VOL	TSC +17.09			
		+Pt	0.13	VOL	BPC -6.62	0.24	0.84	18%

RAI 2:

Please clarify the results of the tube plug and primary bowl drain area inspections. For example, were all plugs present and in the correct position? Did any plugs show any evidence of leakage or degradation? For the primary bowl drain area inspections, were any anomalies or degradation detected?

RAI 2 Response: The tube plug and primary bowl drain inspections had no findings. All plugs were present and in the correct positions with no evidence of leakage or degradation. There were no anomalies or degradation detected during the primary bowl drain area inspections.

RAI 3:

Please clarify the results of the secondary side steam drum and top tube support plate inspections. For example, discuss deposit loading in the secondary side and discuss whether any anomalies or degradation were observed. The staff notes that in a prior inspection possible erosion/corrosion in two J-tube welds was identified. Please discuss whether these indications still exist or whether any other evidence exists that erosion/corrosion is occurring. If it is occurring, discuss the results of the condition monitoring and any planned corrective action.

RAI 3 Response: The secondary side steam drum and top tube support plate inspections had no anomalies or degradation observed and revealed extremely good to excellent conditions in all areas and components viewed. The deposit loading in the secondary side of the steam generators was minimal, with a total of 157 lbs of deposit material removed from the 4 steam generators. The feed ring, J nozzles, associated welds and hardware showed no signs of erosion or corrosion. Five J nozzles in each steam generator were internally inspected looking for signs of erosion at the J nozzle to feed ring interface. The internal surfaces of the J nozzles inspected were intact and of sound condition, showing no evidence that erosion/corrosion is occurring. Two J-tube welds, 34 steam generator J-tubes 1 and 36, had inconclusive inspection results in 1997. J-tube 1 was one of the 5 J-tubes inspected in 34 steam generator during 3R17 and there was no indication of erosion corrosion at this location.

RAI 4:

Please discuss the results of the anti-vibration bar position verification.

RAI 4 Response: The anti-vibration bar position verification results verified that the depth of insertion of the AVB's is in compliance with the design specifications.