

March 20, 2000

MEMORANDUM TO: Frank J. Miraglia, Jr.  
Deputy Executive Director for Reactor Programs

FROM: Samuel J. Collins, Director /ra/  
Office of Nuclear Reactor Regulation

SUBJECT: LESSONS-LEARNED EVALUATION FROM INDIAN POINT STATION  
UNIT 2 FAILURE EVENT

In a February 28, 2000, memorandum (Attachment 1), the Office of Nuclear Reactor Regulation (NRR) requested that the Office of Nuclear Regulatory Research (RES) perform an independent technical review of two NRR safety evaluations (SE) regarding Indian Point 2 (IP2) steam generators (SGs). One of these involved approval of an alternate repair criteria and the other an extension of the tube inspection interval beyond that required by the plant technical specifications (TS). RES responded to NRR's request in a memorandum dated March 16, 2000, (Attachment 2).

The review did not identify any issues with the staff's SE regarding the use of the F\* repair criteria, but did conclude that RES could not reconcile several statements and conclusions in the staff's SE regarding the inspection interval with the information the staff received from the licensee. Specifically, the RES letter indicates that the licensee's assessment of two forms of degradation found in their generators was inadequate: (1) outside diameter stress corrosion cracking (ODSCC) above the top of the tube sheet locations (sludge pile), and (2) primary water stress corrosion cracking (PWSCC) at a row 2 U-bend. RES considered this contrary to the SE prepared by NRR, which concluded that the tubes would meet structural and leakage integrity through the end of the operating cycle.

As follow-up to the IP2 event, the NRC staff will review results of the licensee's current SG inspections, results from previous inspections, the licensee's root cause evaluation, and the licensee's corrective actions as part of its determination as to whether the IP2 SGs are safe to be put back into operation.

As part of its evaluation of the February 15, 2000, IP2 SG tube failure event, the NRC staff will be performing an evaluation of lessons learned from both technical and regulatory process perspectives. NRR's February 28, 2000, memorandum only requested RES review of the technical issues, and did not request that they address the associated regulatory process issues. These process issues do play a role in regulatory decisions, especially when plant TSs are involved. It should be noted that all of this information needs to be evaluated in an integrated fashion in order to accurately assess the lessons learned. The results of this

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lessons-learned assessment will be used to identify any generic technical or process elements that could be improved in the NRC's review of SG issues. It is expected that this assessment will be completed within two months of receiving the licensee's inspection results and root cause failure analysis, currently scheduled to be submitted by early April.

Docket No.: 50-247

Attachments: As stated

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Docket No.: 50-247

Attachments: As stated

February 28, 2000

MEMORANDUM TO: Ashok Thadani, Director  
Office of Nuclear Regulatory Research

FROM: Samuel J. Collins, Director /*ra by RPZimmerman for*/  
Office of Nuclear Reactor Regulation

SUBJECT: REQUEST FOR INDEPENDENT REVIEWS OF MAY 26, 1999, SAFETY EVALUATION REGARDING STEAM GENERATOR TUBE INSPECTION INTERVAL AND FEBRUARY 13, 1995, SAFETY EVALUATION REGARDING F\* REPAIR CRITERIA FOR INDIAN POINT STATION UNIT 2

In follow up to discussions with your staff on February 18, 2000, concerning the recent steam generator tube failure event at Indian Point Station Unit 2 (IP-2), this memorandum documents the Office of Nuclear Reactor Regulation's request that the Office of Nuclear Regulatory Research (RES) perform an independent review of the attached safety evaluation (SE) regarding the steam generator (SG) tube inspection interval for this Unit. In addition, this memorandum requests that RES perform an independent review of the attached safety evaluation allowing the F\* repair criteria to be used at IP-2.

As you are aware, IP-2 shut down February 15, 2000, because of a sudden increase in primary to secondary leakage in SG 24. In 1999 the staff approved a license request to extend the SG tube inspection interval beyond the 24 calendar months required by the plant technical specifications. In particular, by letter dated December 7, 1998, as supplemented by letter dated May 12, 1999, Consolidated Edison Company of New York, Inc. (the licensee), proposed to amend the technical specifications for the Indian Point Station Unit 2. These letters are also attached. This was to allow a one-time extension of the SG inspection interval and remove the requirement of receiving NRC concurrence on the licensee's proposed SG examination program. By letter dated June 9, 1999, the staff issued the requested amendment and forwarded the SE of the licensee's proposed amendment request to the licensee (TAC No. MA4526).

In addition, by letter dated March 13, 1995, the staff issued an amendment allowing the repair of SG tubes via the implementation of an F\* criteria, and forwarded the related February 13, 1995, SE (TAC No. M89373). The SE is attached. The F\* criteria allowed tubes that are degraded in a location not affecting structural integrity of the tube to remain in service as an alternative to removal from service through the use of tube plugs. The amendment was issued in response to an application from the licensee transmitted by letter dated April 13, 1994, and supplemented by letters dated December 20, 1994, January 12, 1995, and January 31, 1995.

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ATTACHMENT 1

## Stakeholders to be Contacted for IP2 Reseach/NRR SG Review

### Internal

OCA Tom Madden  
OSP  
OPA (HQ and Region) Beth Hayden and Diane Screnci  
Region Bill Ruland, Communication Team Lead  
Petition Manager Len Wiens  
Project Managers Jeff Harold, George Wunder  
OIP and Mike Cullingford  
Commission via Jim Blaha by Joe Shea

### External

Licensee (Mr. Groth) - contacted by Hub Miller  
Petitioners (Mr. Lochbaum, Mr. Smeloff, Mr. Riccio, Mr. Mariotte) - contacted by petition manager  
Interested Congressional Members (Congresswomen Kelly and Lowey; Congressmen Forbes, Engel and Gilman, Senators Moynihan and Schumer  
NYS Assemblywomen Galef and Calhoun; Chairmen Tonko and Vann, and County Executives - contacted by Eselgroth/Miller  
Coalition of Elected Officials listed on GT 135 regarding replacement of SGs - contacted by Eselgroth/Miller  
NYS Liason Office (Baranski/Spath) - contacted by Bores (Ruland)  
Media - note to editor - issued by OPA