



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 4, 2000

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Wow!!  
Tough Questions  
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MEMORANDUM TO: Jack R. Strosnider, Director  
Division of Engineering

John A. Zwolinski, Director  
Division of Licensing and Project Management

FROM: Scott Newberry, Chairman  
IP2 Lessons-Learned Task Group

SUBJECT: IP2 SAFETY EVALUATION REPORT

The memorandum that transmitted the Indian Point 2 Steam Generator Tube Failure Lessons-Learned Task Group Charter, dated May 24, 2000, states that "should the task group identify concerns or issues that may need to be addressed by Indian Point 2 prior to restart, the group will forward them to the staff for appropriate action."

The purpose of this memorandum is to provide to you our current list of restart review areas consistent with the charter. Along with our lessons learned tasks, this list is a living document derived from the charter and our ongoing discussions and evaluation. As we work on these issues and gain a more in-depth understanding of the technical arguments, some additional issues may be added and some that are listed may be found to be less relevant to the restart review.

We would note that all issues may not be explicitly in the staff safety evaluation report if otherwise resolved or addressed by another aspect of the regulatory process (e.g., regional inspections, etc.).

I appreciate your continuing support for our efforts.

Attachment: As stated

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**IP2 Lessons Learned Task Group  
Restart Review  
Rev. 0, July 14, 2000**

**Safety Evaluation for Restart**

1. How good/reliable was the licensee's inspection this year? Is the data quality (e.g., signal-to-noise ratio from copper deposits, sludge piles, etc.) in the year 2000 inspection good enough to have confidence that flaws in the tubes (i.e., greater than 40 percent or 70 percent through wall) have been found?
2. Are issues relating to the probability of detection and effective full power days explicitly addressed in the SE?
3. Continuous stressing as a result of additional tube bending increases the susceptibility to crack growth. How did ConEd evaluate the contribution to crack growth resulting from deformation of the SG tubes (i.e., bending)?
4. Use of the high frequency probe enhances the detection of inside diameter degradation such as PWSCC, and gives us more confidence in the 2000 inspection. Are we concerned about the potential for ODSCC in the U-bends?
5. What is the technical basis for adequacy of the ODSCC inspection in the sludge pile region, since the high frequency probe would not have provided enhancement for detecting ODSCC.
6. Is there too much focus by ConEd and/or NRC staff on inner row U-bend tube failures such that other failure mechanisms/locations are not adequately considered [e.g., ODSCC in the free span region above top of the tube sheet (sludge pile)]? What measures does the licensee use to consider other failure mechanisms or locations and what criteria are used to evaluate other mechanisms/locations if encountered?
7. The licensee may not be capable of detecting cracks in the row 3 U-bends at 40 percent throughwall with 80 percent probability of detection with 95 percent confidence. What alternative to this criteria is acceptable to the staff?
8. Is sufficient attention being paid to PWSCC in the U-bend region of the low row SG tubes (i.e., row 3 and higher, since all the row 2 tubes have been plugged)?
9. Have appropriate inspections/condition monitoring/operational assessment/corrective actions been taken to have necessary confidence that the tubes will meet structural and leakage integrity (considering any potential degradation mechanism in any region of the tubes) until the current SGs are replaced?
10. Are the issues contained in the research review findings adequately addressed in the SE? (e.g., inadequate operational assessment - no growth rates or NDE uncertainty; significance of new forms of degradation - ODSCC at sludge pile and PWSCC in U-bends; whether dubious licensee arguments were considered in SE findings).

11. Does the SE consider one of the potential lessons learned, which is "SERs prepared by NRC should clearly state the bases for the conclusions reached and clearly identify licensee information not relied upon as part of the bases."

Regional Issues/Others

12. Are issues on inadequate root cause and corrective actions with respect to SG integrity addressed in the SE?
13. If there are differences between the licensee's Root Cause(s) and the NRC's Special Inspection Team's Root Cause(s) (there are), then can we have reasonable confidence that IP2's corrective actions will prevent recurrence?
14. In a practical sense, how will the EPRI guidelines be used for their next cycle at IP2? For example, how are the EPRI guidelines for primary to secondary leakage (both absolute values and rate-of-change values) being incorporated into their performance during their next cycle? [In the transmittal letter from NEI to NRC for NEI 97-06, NEI promises "Each licensee will evaluate its existing steam generator program and, where necessary, revise and strengthen program attributes to meet the intent of the guidance provided in NEI 97-06, Steam Generator Program Guidelines, no later than the first refueling outage starting after January 1, 1999." It is our understanding that the EPRI guidelines would become the basis for the licensee procedures.]
15. Has the NRC communicated to the public and other stakeholders, **in plain English**, the basis for the restart decision, including the risk to the public from the operation of IP2 for a limited period of time with the current SGs?