

Item 2

Indian Point 2 - Steam Generator Special Inspection - Communication Plan  
Questions & Answers

**1. Conduct of the Inspection**

**I understand that Con Edison has made several arguments against these findings. Why are these not available to the public? Are there secret negotiations going on?**

Con Edison's objections are listed in the preliminary finding letter dated July 27, 2000. The NRC has evaluated the positions taken by Con Edison, concluding that from a technical perspective the information did not change the preliminary findings.

The NRC does not negotiate its findings with licensees but considers information supplied by licensees in an attempt to arrive at a conclusion that gives fair weight to all the views expressed.

**We have heard that Con Ed will fight these findings in court - what is the NRC's position on this?**

The Reactor Oversight Program has built into it ways that a licensee can dispute findings, one of which is the Regulatory Conference - which we plan on having with Con Edison. Following that conference we will issue our final significance determination and any violation as determined by NRC management.

If Con Edison still disagrees with the NRC's decision - they may appeal the decision.

**Will the NRC take any action against the contractor that did the eddy current examinations?**

The plant licensee has the responsibility to ensure that NRC requirements are met by contractors that it hires.

**If Con Ed could not do the eddy current examination correctly how does the NRC know they will do the replacements correctly?**

The NRC has underway an inspection of the SG replacement. This will include a review of the Con Edison pre-service examination which included base-line eddy current examination.

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**With the possible sale of IP2, how will NRC ensure that Con Ed keeps it's eye on safety, until the sale?**

The NRC's reactor oversight program provides for NRC inspections and oversight based on licensee performance. The NRC has classified Indian Point 2 as an "Agency Focus" plant, which entails increased inspection and oversight activities.

**Why was a public exit not held for this inspection?**

Inspection exits are not normally public meetings. Additionally, at the time of the exit, the Region and NRR were closely coordinating activities on a tight timeframe. The Preliminary finding letter, dated July 27, 2000, was viewed as the best way to make the public initially aware of the issues. The Agency focus meeting and SG Regulatory Conference will be two opportunities for public observation in September.

**2. Technical SG Issues**

**What has been done to prevent recurrence of a similar problem at Indian Point 2?**

The SG are being replaced. Con Edison has completed a pre-service eddy current inspection of the new SGs.

**What does hour-glassing mean?**

The inward bulging of the tube support plate flow slots caused by denting of adjacent tubes. When this happens there can be stresses placed on the tube that make it more susceptible to stress corrosion cracking.

**How will the replacement SGs compare to the ones that will be removed?**

The replacement SGs have some improvements over the previous SGs. The replacements have improved tubes and tube support plates. The tube material has an improved resistance to cracking (through stress relieving). The Tube Support Plate (TSP) material has a reduced potential for denting.

**Con Edison stated that primary water stress corrosion cracking (PWSCC) was an expected condition and no notice was provided to analysts other than through the normal disposition process. Does the NRC consider that Con Edison should have done more?**

The NRC has concluded that Con Edison should have taken additional steps upon discovery of a tube with PWSCC, in terms of extent-of-condition assessments. Not taking these steps prematurely closed the door to finding other examples of tube conditions adverse to quality before the steam generators were returned to service.

### 3. ROP Issues

**Would IP2 be allowed to operate if they have a red finding or multiple degraded cornerstones? If these conditions exist, doesn't this mean that the plant is unsafe?**

A red finding in a cornerstone indicates that safety margins have been reduced to a point where increased NRC oversight is warranted. A red finding or multiple degraded cornerstone finding does not mean that the plant is unsafe to operate. NRC scrutiny would be at a very high level to ensure that adequate corrective actions are taken to restore margins to an acceptable level. When the NRC identifies the degradation of multiple degraded cornerstones, certain actions are recommended by the action matrix of the reactor oversight program. Per the action matrix, the extensiveness of the NRC actions increases as the risk significance of the condition increases. At the multiple degraded cornerstone level, many significant regulatory actions are considered (e.g., Confirmatory Action Letters, intensive inspections etc.) The NRC's goal is to ensure that the extent and nature of the underlying problems are fully understood to make an informed decision about whether additional more stringent measures are needed. However, it does indicate that the NRC will carefully evaluate continued operation during its further inspections and assessments.

**What is the difference between the NRC's risk assessment and the one produced by Con Ed?**

The NRC's analysis, in accordance with the Revised Oversight Process SDP, evaluates the risk increase caused by the degraded **condition** of the steam generator tubes, being in operation for a year timeframe. The most severely degraded tube could have ruptured for a variety of reasons under a variety of circumstances. The NRC's analysis considers all of the circumstances in which the tube might have been induced to fail or might have failed spontaneously. For each circumstance, the NRC evaluated the frequency of the circumstance, the probability that the tube would fail under that circumstance, and the probability that the circumstance, when complicated by tube failure, would lead to core damage. The NRC used the sum of the results for all circumstances as the measure of the risk created by the tube degradation.

The licensee's analysis considered only the specific features of the spontaneous tube failure **event** as it occurred on February 15, 2000. Credit was taken for the specific leak rate that occurred being less than the leak rate assumed in most Probabilistic Risk Assessments. For the lower leak rate, there is more time for the plant personnel to take the actions that are necessary to prevent core damage. This makes the probability of human error lower. Because the probability of core damage following a steam generator tube rupture is dominated by the probability of human errors (which is higher than the probability of equipment failures), the licensee's re-evaluation of the human error probabilities led to substantially lower results. However, it neglects the potential for the tube failure to have a much higher

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flow rate. It also neglects the potential for the tube failure to have been induced by other circumstances that would have complicated the recovery process that the plant personnel needed to accomplish to prevent core damage. Therefore, the NRC does not consider the licensee's approach to be appropriate for establishing the risk significance of the tube degradation that occurred.

**Will the Regulatory Conference be open for public observation?**

Yes, as stated in the Cover Letter for the IR the meeting is scheduled for September 26 and will be open to public observation.

**Con Ed declined to attend a regulatory conference on the emergency preparedness findings. Will they attend one this time?**

Con Ed has informed the NRC that they desire to discuss these issues at a regulatory conference. However, the company has the option of attending a conference, providing the NRC with additional information, or accepting the inspection finding assessment as written in the inspection report.

**What does a "Potential Red" finding mean? Assuming that it remains red following the Reg Conference, what will the NRC do?**

The "Red" finding means that the NRC put the issue through the significance determination process, to quantify the amount of risk that the issue causes, and it came out as a significant risk issue (Red). This was based on the probability of a steam generator tube rupture being increased above the normally assumed value of 1 per 80 Reactor years of operation. Because of the degraded condition of the steam generators the NRC assumed that a full SGTR would occur once per year, and adjusted that frequency to .5 per year based on the flow rate being lower for the actual event at IP2.

The issue is termed "Potential" Red finding since the NRC will take Con Edison's information into account and determine the final significance following the Regulatory Conference.

It must be clear that the SDP focuses on potential risk of a condition over its period of existence. The NRC will assess the necessary actions in accordance with the action matrix in the ROP, following the Reg Conference.

**Within the past months, IP2 has had "more than three White inputs in a performance area" and a potential Red input. What does that mean in terms of NRC response?**

The three white issues indicate a degraded cornerstone in the Emergency Preparedness area. A supplemental inspection will be conducted for the EP issues.

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Following the Regulatory Conference and a determination of the final finding on the SG inspection, the NRC will use the Revised Oversight Program Action Matrix which identifies appropriate levels of NRC response based on a risk informed basis.

**Will the utility be fined for this violation?**

Under the new enforcement policy, which goes hand-in-hand with the ROP, there are no civil penalties for this type of issue.

**Why haven't you issued a violation, civil penalty or shut down order?**

The action taken by the NRC will be based on the final significance determination that will be developed following the Regulator Conference on September 26, 2000. The inspection report does summarize an apparent violation of 10 CFR 50, App. B, Criterion XVI.

**How does the designation of IP2 as an agency focus plant fit into the ROP and how is it affected by the findings of this report?**

The designation of the "Agency Focus" plant was made with the knowledge of the February 15, 2000 event. The NRC is still transitioning to the ROP. Recognizing this, the Senior Management Meeting conducted in May 2000 used the previous assessment guidance, with insights from the new program. At that meeting the Senior NRC staff decided that performance problems (including both the February event and past issues) were significant enough to require additional NRC management attention.

The Agency Focus designation indicates increased management attention. Following the Regulatory Conference and our final determination of significance, we will finalize additional actions in accordance with the ROP action matrix.

**The May 23, 2000 letter says that Con Edison has taken actions to turn around performance. What were they and how do you know they will be effective?**

Con Edison has taken actions to improve performance by increasing the internal standards of personnel performance. The NRC has not fully determined the effectiveness of these improvements, but inspections continue.

**Will the NRC be scheduling a diagnostic type inspection at IP2?**

A decision to conduct or not conduct a diagnostic type of team inspection would come after determination of the final characterization of the inspection finding following the Regulatory Conference.

**Will the Agency Focus meeting on September 11 between NRC and Con Ed be open for public observation?**

Yes, it will be a meeting open to public observation at the site, at 7pm.

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**Generally the ROP requires less inspection effort by the NRC - how has the inspection of the SG examination process changed? If you did not find this issue in 1997, how would you with a reduced level of effort?**

The NRC continues to review SG issues. An independent Lessons Learned Task Force is evaluating the associated regulations, technical specifications, and the inspection program and will be addressing this question

**4. Indian Point 2 Actions**

**How can you consider allowing Indian Point 2 to startup given the significant management and program problems?**

The NRC continues to question Con Edison's programmatic corrective actions. In addition Indian Point 2 is the focus of increased NRC attention and will be into the near future as part of the revised oversight program.

**Aren't you going to keep Indian Point 2 shut down until the issues identified in your inspection are fixed?**

Con Edison decided to replace SGs. Further inspection of the SG Program will occur as a supplemental inspections.

**Why does Con Edison say the exact opposite -- that "they met all requirements?" Are you going to pursue the "wrongdoing" implications because they are misleading the NRC and the Public?**

Overall the specific requirements are in the TS, 10 CFR 50.55a, and ASME Section XI. And 10 CFR 50, Appendix B, Criteria IX Special Processes and XVI Corrective Actions. The NRC, in Part 50 Appendix B, holds the licensee to a broad standard by establishing a framework of expected levels of performance. The NRC has preliminarily concluded that Con Edison failed to meet this level of performance.

What Con Edison is quoting as an acceptable means of satisfying NRC requirements is implementation of a generally accepted industry prepared document (EPRI) process for conducting a generic SG examination. The NRC believes that Con Edison did not modify and adjust this generic program appropriately to compensate for identifiable significant adverse conditions in their SGs.

**5. Past NRC Performance**

**Why didn't the NRC know there were problems with IP2's program in 1997?**

The NRC is reviewing the 1997 inspection as part of the lessons learned task force.

In 1997 the NRC inspection was directed toward the broad area of in-service inspection a portion of which is the Steam Generator inspection program. The current inspection team took a much closer look at the Steam Generator program

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using specialists and contractors to delve deeply into the causes of the recent tube leak event.

**Why should we have confidence in the NRC's ability to regulate these plants?**

The NRC depends, in part, on defense-in-depth in order to assure an appropriate framework of safety barriers exist. The NRC uses its inspection program, licensing reviews, and regulatory oversight program, to assure the defense-in-depth is being maintained by a licensee.

While an actual situation may increase risk it does not mean that at the time there was a specific safety consequence. Risk looks at the probability of an event and the potential consequences.

**Who in the NRC is responsible and being held accountable?**

The Inspector General and the Lessons Learned Task force continue to review aspects related to this question.

**What have you done to correct problems with NRC effectiveness?**

In order to correct a problem it needs to be understood first. The NRC has assembled a team in order to ascertain the lessons the NRC can learn from this incident. The team will make recommendations that can be considered for implementation as improvements in the NRC process.

**Does this inspection finding validate the NRC's Research conclusion about the adequacy of the review conducted prior to allowing the extension of the operating cycle?**

When the IP2 tube failed in February, NRR requested that the NRC Office of Nuclear Regulatory Research perform a review of NRRs earlier reviews of Con Edisons submittals to NRR regards the steam generators. The scope of the NRC SG inspection report presently being issued did not include a comparison to the RES memo conclusions about NRRs review of Con Edison's 1997 inspection work. This report relates to Con Edison's inspection of the condition of the steam generators in the 1997 timeframe. The comments made by Research are being reviewed by NRR and the NRC's position on the what was done in the past will be forthcoming.

## **6. Generic Implications**

**What other plants have similar problems with detection of tube flaws?**

Although, to varying degrees, other plants may have some form of steam generator degradation the agency is not aware of a plant facing problems similar to those faced by Indian Point 2.

**What are you going to do about the steam generator issue?**

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The NRC has an initiative underway with the Nuclear Energy Institute to develop plant Tech Specs and industry guidelines that provide a consistent industry approach for managing steam generator programs and for maintaining steam generator tube integrity. (See Secy 00-0078)



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**How can you ensure that other plants are safe from steam generator tube failures?**

The goal of the steam generator inspection program is to have steam generators operate without tube failures. This is a goal, and it is recognized that some tube failures may occur. Plant response to such failures is something that operators are well trained to deal with using heavily prescribed procedures. When they have occurred at plants, the failure data is reviewed to see what can be learned to minimize future failures. Although the tube failure at IP2 on Feb 15<sup>th</sup> is significant to the NRC, it's important to point out that this tube failure had no impact on public health and safety. No NRC limits on radiation exposure to the public were exceeded and there was no measureable radiation above normal background levels in the area surrounding the plant from the tube failure.

Currently the NRC is requiring licensees to conduct baseline inspection programs for In-service inspection once every two years or once per refueling cycle. Any actions to enhance the inspection program coming from reviews of the recent IP2 event will come after the NRC's lessons learned task force has completed its work and NRC management has had time to develop corrective actions, as necessary.

**What confidence do we have of steam generator tube inspections in general when there is so much uncertainty.**

There is a continuing potential for a SGTR at pressurized water reactor plants and plants are designed and operators trained to cope with type of event. The assumption on the rate of occurrence is based on the industry experience of 8 tube failures/ruptures in the past 25 years. This occurrence rate is based generally on a past good performance of eddy current inspection at identifying and evaluating defects. However, even with the best techniques and performance there are occasionally tubes with flaws that are missed. The plants designed for the occurrence of a tube rupture (i.e, it is a design basis accident). Further operators are trained in the symptoms and the actions needed to shut down the unit and keep the reactor safe. These systems and the operator actions protect the public from releases of radiation (as they did here at IP2).

The NRC estimates that a SGTR would occur causing core damage and a significant release once in 1,000,000 years of operation. This is based on an assumption that a SGTR would occur once per 100 years of operation assuming the normal detection of flaws. In the IP2 case, given the existence of flaws, the NRC assumed that there was an increased risk to once in 10,000 years of operation, because the assumed occurrence of a SGTR was taken from once in 100 years to one in one to two years.

**What is the NRC's position on NEI and EPRI saying that the noise data was worse in IP2 (vice similar to other plants as Con Ed has stated).**

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The NRC staff appreciated the work done by NEI and EPRI. The data presented by EPRI indicates that the level of noise in the IP2 U-bends is high and not representative of noise at other plants of a similar design and vintage.

**7. General Issues**

**What is the NRC's position on Gov. Pataki signing the bill that prohibits Con Ed from passing the cost of the outage along to the rate payers?**

The NRC's actions following the inspection were taken absent involvement with NY State officials.

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**Was NY state involved in the inspection?**

A NY State PUC engineer accompanied the team through its first week, and a PUC representative was at the team's exit meeting.

**What do you think of Con Edison's statement that the NRC is coming down hard on them because the Congress came down hard on the NRC.**

This event did receive significant attention by the public and local, state and federal elected officials. The inspection activities and the findings were not influenced by these concerns. The licensee responded well to the SG tube failure minimizing any actual consequence to the public health. The SG inspection focused on determining how the root causes of the failure and evaluation the POTENTIAL risk of the findings. The ROP SDP has been followed.