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UNION OF CONCERNED SCIENTISTS

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Subject: GI-163, Multiple Steam Generator Tube Leakage

I am writing to express my concerns about the adequacy of the NRC's responses to the requests made in my letter to you dated November 23, 1992.

Thank you for the prompt action in placing the documents I requested in the public document room and for advance notification of the agenda for the meeting held at the Trojan plant on December 1, 1992. I did not attend because of the location, the short notice and the fact that the agenda was not focused on the staff's assessment of the risks posed by multiple steam generator tube leakage.

As far as I am aware, the staff has not yet provided an explanation of why Westinghouse plants, other than Trojan, are being allowed to continue operation with flawed steam generator tubes before the subject generic issue is resolved.

As for the staff's explanation, thus far, concerning the Trojan plant (i.e., a November 24, 1992 memo to C.J. Heltemes, Jr. from F. Gillespie and a November 30, 1992 memo to F. Gillespie from C.J. Heltemes, Jr.), I consider it to be wholly inadequate.

Two major deficiencies in the staff's response, which are discussed in more detail below, are:

1) Addressing only the September 28, 1992 memo from C.J. Heltemes, Jr. and generally ignoring the well-documented technical issues raised in J. Hopenfeld's memos dated March 27, 1992 and September 11, 1992 and in J. Muscara's memo dated March 16, 1992.

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2) Failing to explain why the Trojan plant may be permitted to operate prior to the resolution of a generic safety issue that was opened as a direct result of the Trojan license amendment permitting operation with hundreds of flawed steam generator tubes.

The following technical issues are among those that the staff has generally ignored in its response.

* - An accident involving core melting and radioactive releases outside the containment can occur even without the rupture of any steam generator tubes. Leakage of many flawed steam generator tubes could have the same result as the rupture of fewer tubes. The reason is that flawed steam generator tubes which are not leaking during normal operation, could begin leaking under the higher differential pressure caused by a main steam line break (MSLB). Similarly, the leakage through flawed tubes during normal operation at a rate less than 130 gpd could increase significantly as the result of the higher differential pressure of a MSLB.

The statements supporting the Differing Professional Opinion (DPO) are more succinct: "The fact that degraded tubes neither leak, at normal pressures, nor burst under SLB pressures is not an indication that they will not leak following a SLB accident. * * * It makes no difference whether the leak origin was from one ruptured tube or many pin hole leaks." [Memo from J. Hopenfeld, March 27, 1992, Enclosure, p. 5.]

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* - The staff's response asserts that the Office of Nuclear Regulatory Research made assumptions that ignored the information obtained from tests and inspections of the Trojan steam generator tubes described in the staff's safety evaluation report (SER) for the Trojan license amendment no. 178. Even a cursory examination of the documents cited above would have shown that this assertion is false. The September 28, 1992 memo from C. Helternes, Jr. and the March 27, 1992 memo from J. Hopenfeld explicitly took into consideration the Trojan SER and the tests and inspections conducted on the Trojan steam generator tubes.

* - The staff's response fails to even acknowledge the existence of, much less address, the large number of uncertainties involved in assessing the risk of plant operation with hundreds or even thousands of cracked tubes. For example, there is a low probability that flaws will be detected and that, even if detected, it is difficult to determine the length and depth of the cracks. There also appears to be insufficient data to be confident that the estimates of crack growth during operation are conservative or that leak rate monitoring during operation can provide an adequate basis for evaluating crack growth during operation and during accidents such as MSLB. Although the staff may have attempted to be conservative, there is insufficient data to make a compelling case that an adequate safety margin remains.

* - The staff's response claims that the Office of Nuclear Regulatory Research erred in stating that a leak-before-break concept is inherent in the staff's safety evaluation report for Trojan. [Memo from F. Gillespie, November 24, 1992, Enclosure, p. 3.]

If that were a correct claim, the staff would have to acknowledge that the reduction in the allowable leak rate to 130 gallons per day provides no improvement in safety over the tube leak rate previously applicable to the Trojan steam generators. This is so because, unless the tube leak rate increases slowly (i.e., unless the leak-before-break concept is inherent in the staff's safety evaluation report for Trojan), the tube leakage rate will go from negligible to a rate in excess of both the new 130 gpd limit and the previous higher limit. In fact, this is essentially what occurred on with the tube leak at Trojan on November 9, 1992, although I recognize that the licensee believes the cause was improper heat treatment of a sleeve weld rather than a flawed tube. Nevertheless, the same behavior of a rapidly increasing leak rate or tube rupture could occur during a steam line break accident.

* - As a final example, it should be noted that the staff's response does not address the point that relaxation of the steam generator tube repair criteria provides no safety benefit to the public. The sole benefit is to the economics of continued operation of the Trojan plant because, absent NRC approval of the more lenient repair criteria, the plant probably could not operate at 100 percent of rated power. Furthermore, the approval of the Trojan license amendment violated the much-touted principle of defense-in-depth. What remains in terms of protection for public may be little more than a Maginot Line.

With regard the second major deficiency in the staff's response to date, the staff implies that the new generic safety issue established as directly result of the Trojan license amendment need not be resolved in order to permit operation of the Trojan plant. This ignores the criticism of NRC's handling of generic safety issues expressed by the President's Commission on the Accident at Three Mile Island (the Kemeny Commission) and the U.S. General Accounting Office (GAO).

The staff of the Kemeny Commission found that defining an issue as generic was a mechanism the NRC used to "insure the granting of an operating license for an already constructed plant." [Staff Report to the President's Commission on the Accident at Three Mile Island, The Nuclear Regulatory Commission, October 1979, p. 43.]

The Kemeny Commission itself pointed to NRC's handling of generic safety issues as "an important example" of how "NRC's primary focus is on licensing and insufficient attention has been paid to the ongoing process of assuring nuclear safety." The Kemeny Commission concluded that "the evidence indicates that labeling of a problem as 'generic' may provide a convenient way of postponing decision on a difficult question." [Report of the President's Commission on the Accident at Three Mile Island, October 1979, p. 20.]

More recently, the GAO performed an assessment of NRC's safety standards, enforcement activities and inspection efforts. [U.S. General Accounting Office, "Efforts to Ensure Nuclear Plant Safety Can Be Strengthened," GAO/RCED-87-141, August 1987.] The following are some of the issues raised by the GAO:

* The lack of guidelines to identify safety violations severe enough to require a nuclear plant to shut down;

* The slow corrective actions on the part of the NRC to shut down nuclear plants with records of chronic safety violations. It was documented that the NRC has taken from several months to up to ten years to resolve generic safety issues - including those that the Commission believes pose the highest safety risk.

* The backlog of 163 unresolved generic safety issues as of last December [1986], including 32 considered to pose a significant risk to public health and safety.

I am inclined to conclude that the same problems are affecting the NRC staff's handling of the issues concerning the flawed steam generator tubes at the Trojan plant, at least based on the staff's response to date.

I remain open to the possibility that there may be an adequate technical basis for concluding that operation of the Trojan plant given the current condition of the steam generator tubes is acceptable. However, I do not believe that the staff has yet provided such a basis. Thus, any requests for an adjudicatory hearing before Trojan resumes operation which have been made by the public are understandable and should be given careful attention.

The problem facing Commission is that there is a fundamental disagreement between two of your staff offices about the risks posed by flawed steam generator tubes. One office bases its conclusions and recommendation solely on technical considerations. The other office feels obligated to justify its decision to allow plant operation despite the unresolved technical issues. How the Commission resolves this problem will depend, in part, on whether higher priority is given to protecting public health and safety or the financial interests of the nuclear industry.

Sincerely,

Robert D. Pollard

Robert D. Pollard
Nuclear Safety Engineer