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EA-00-179

Draft Letter to Baumstark

SUBJECT: RESPONSE TO NRC SPECIAL INSPECTION 50-247/2000010 - STEAM GENERATOR TUBE FAILURE

As the reviewing official, I am responding to your letter dated January 19, 2001, in which you contested the Notice of Violation concerning Con Edison's 1997 steam generator inspections. The violation was issued on November 20, 2000, by Mr. Hubert J. Miller, Regional Administrator, Region I. While you do not agree with the violation, I note that the NRC and you are in agreement that steps be taken to improve your steam generator inspection program.

I have determined, after careful consideration of the bases that you have provided, that no additional information was presented that would alter the NRC's conclusion that a violation existed. The information in your letter was not substantially different than provided to the NRC during the NRC special inspection and subsequent meetings. This was consistent with the regulatory conference conducted on September 26, 2000, during which you stated your disagreement with the violation, but provided no additional information.

Regulations in 10 CFR 50, Appendix B, requires, in part, that significant conditions adverse to quality be evaluated and actions taken to prevent recurrence. This regulation recognizes that prescriptive requirements cannot be written for every condition that may be encountered, particularly in the case of plant specific conditions. Therefore, when such conditions are encountered, licensees must take actions that are commensurate with its significance. Such conditions were encountered during the 1997 steam generator inspections. Based on industry information that was available, these conditions indicated an increase susceptibility of the low row tubes to primary water stress corrosion cracking (PWSCC) and an adverse impact on detection of tube flaws. Your evaluation of these conditions and corrective actions were not adequate and contributed to leaving tubes with PWSCC flaws in the low row tube in service.

In your letter, you made several statements that the NRC does not agree or believe to be pertinent. While I do not intend to address each and every statement, ...

[Based on the level of detail we need to provide]

... I address some of the your key statements in Attachment A of this letter.

or

... I would like to highlight two specific statements. In your letter, you stated, "it is not clear what 1997 SG inspection program adjustments would have been made to compensate for the effects of particular noise levels in diminishing the detectability of flaws even if those confounding influences had been appreciated." Further, you stated that the signal to noise ratio for R2C67 was three to one. It is important to note that the flaw in R2C67 was identified during the 1997 steam generator inspections. However, while the signal to noise in that immediate region was three to one, the noise in similar low row u-bend areas was much higher, and a signal to noise ratio of three to one was not achieved. As stated in the affidavit of Stephen Brown, the amplitude of the missed indication in R2C5 is comparable to the reported identification of R2C67 i.e., 2.31 volts

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versus 2.16 volts. However, the peak-to-peak noise level in R2C5 was higher by roughly a factor [of] four.

While the NRC does not intend to prescribe what Con Edison should have done in response to the conditions encountered by Con Edison in 1997, the NRC believes that adequate evaluations and corrective actions in response to the significant conditions encountered during 1997 would reasonably have prevented leaving the flaws in the low row u-bends in service. The high signal noise in susceptible areas to PWSCC (i.e., the low row u-bends) could have been accounted for in the inspection program.

Adjustments could have been made in closer interrogate those susceptible areas or simply plugging the tube. Neither of these adjustments were considered in 1997, although it was reasonable for you to have done so.

Although you contested the violation, you also provided corrective actions, either planned or completed, in response to the violation. NRC Region I will review your corrective measures to resolve this violation in a future inspection.