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From: Edmund Sullivan *MS*
To: Emmett Murphy *EM*
Date: Wed, Apr 19, 2000 5:51 PM
Subject: Root Cause Evaluation

Based on a quick look at Con Ed's April 14th root cause evaluation, we think that it is important to pass on that this report is quite weak. It concludes that a significant contributor to the tube failure was increased stress in row 2 due to tube support plate flowslot hourglassing. However, the report does not reconcile this postulated failure mechanism with all the available information pertinent to the condition of the steam generators. For example, the report does not explain how the postulated failure mechanism accounts for other cracks found in the u-bends besides the crack which led to the failure. The report does not adequately dispose of other potential failure mechanisms such as excessive ovality associated with u-bend fabrication. Implications of reported u-bend restrictions in 1997 are not discussed. The explanation in the report of how a u-bend crack went undetected resulting in the tube failure is very incomplete. There is no discussion on how this failure could have been anticipated based on available evidence.

The cited weaknesses are just based on a cursory review. These weaknesses are all in areas that we indicated would need to be addressed during the daily phone calls with Con Ed since February. We expect that we will have a large number of questions on the report and that the report will need considerable updating before we can make the findings we will need to make. Based on this report we do not consider that the two month clock for the lessons learned report has started.

CC: Bill Bateman, Stephanie Coffin

JT/23