

LER 82-38/99T-0
YANKEE ATOMIC ELECTRIC COMPANY
YANKEE-ROWE 50-29

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

While in mode 6, during the inservice inspection of No. 1 steam generator tubes per Technical Specifications 4.4.10.1 and 4.4.10.2, seven tubes indicated a wall degradation of >40%. These seven tubes, one previously identified leaker and one with 39% degradation were plugged. The inservice inspection was accomplished to more than 99% of the steam generator tubes. Similar events have been reported as LER's 77-37, 78-30 and 81-11. The plugged tubes are at the following locations:

Location	Degradation	Hot/Cold Leg
P-44	Leaker	Hot
P-42	63%	Hot
K-44	56%	Hot
N-33	39%	Hot
H-32	80%	Cold
H-25	>80%	Cold
H-28	73%	Cold
D-30	89%	Cold
G-26	65%	Cold

There have been 43 tubes plugged previously out of the 1620 tubes in the steam generator.

As a result of the tube leak, primary coolant was introduced into the secondary side water inventory and then released to the environment.

The maximum resulting primary to secondary leak rate through tube P-44 was approximately 130 gallons per day during plant operation just prior to the Core XVI Refueling Outage. The estimated released activity due to the leaking tube from September 10, 1981 to September 16, 1982 was as follows:

23.48 Curies	Primary Vent Stack to Atmosphere
9.1 Curies	S/G Blowdown to River

The Technical Specification limit for primary to secondary leakage is 1 gallon per minute (1440 gallons per day). No adverse effects to the public health or safety resulted from this occurrence.

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

The degradation has been attributed to corrosion from the outside of the tubes. The steam generator is a 13,430 square foot, vertical type, 1620 U-tube heat exchanger manufactured by the Westinghouse Corporation. The tubes were mechanically plugged on October 29, 1982. No further corrective actions are necessary.

PERSONNEL EXPOSURES

The maximum dose rate to which any one of the workers was exposed, categories of the workers, number of exposed in each category, and estimated total man-rem received by each category were as follows:

- A. Maximum Dose Rate to Any Person 20 R/HR
- B. Dose by Personnel Category:

	Maintenance	Engineering	HP	Plugging Contractor	Q/A
Number of Personnel	41	2	9	4	1
Dose(Rem)	9.435	0.3	0.84	2.435	0.04

Dose as a result of degraded tubes include:

- a. Removing and Installing S/G Manways
- b. Mechanical Tube Plugging
- c. Cleaning, Marking and Verification of Tubes

The total dose for all the steam generator inspections, work and necessary support evolutions was 3.6152E01 REM.