

Public Service
Electric and Gas
Company

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Vice President and Chief Nuclear Officer

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United States Nuclear Regulatory Commission
Document Control Desk
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Gentlemen:

NRC BULLETIN 88-02
RAPID PROPAGATING FATIGUE CRACKS IN STEAM GENERATOR TUBES
SALEM GENERATING STATION
UNIT NOS. 1 AND 2
DOCKET NOS. 50-272 AND 50-311

By letter dated August 16, 1990, the NRC Staff issued the Safety Evaluation addressing Public Service Electric & Gas Company's (PSE&G) response to NRC Bulletin 88-02, Rapid Propagating Fatigue Cracks in Steam Generator Tubes. As required by that letter PSE&G is providing notification of implementation of the administrative controls required by the Safety Evaluation. PSE&G is also providing information on steam generator tube plugging that was performed during the current refueling outage (2R6) at Salem Unit 2 as a result of the NRC Bulletin 88-02 concern.

Although both the Salem Units have currently plugged less than 3½% of the steam generator tubes, an analysis to demonstrate acceptability to 10% tube plugging has been completed by Westinghouse. Station procedures ensure that if 3.5% tube plugging is exceeded, engineering is notified to evaluate the increased tube plugging. When necessary, procedures will be revised to permit the 10% tube plugging limit.

During the analysis performed to address 10% steam generator tube plugging, eight additional tubes for Salem Unit 2 were identified as requiring plugging and stabilization. There are no tubes for Salem Unit 1 that required plugging as a result of the NRC Bulletin 88-02 evaluation to 10% steam generator tube plugging.

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During the current Unit 2 refueling outage (2R6), the following tubes, identified during the analysis, were plugged and dampeners installed. The cold leg ends of these tubes are plugged using sentinel plugs with a 0.0135 inch diameter hole.

Steam Generator 21
R9C59
R9C60

Steam Generator 22
R8C61
R10C46
R10C50
R11C16
R11C17

Steam Generator 23
R8C59

Additionally, tubes R9C59 and R10C60 in Steam Generator 24, which had been plugged and stabilized with stabilizers previously, were modified to install sentinel plugs with a 0.0135 inch diameter hole in the cold leg ends.

Thus, all Salem Unit 2 steam generator tubes plugged and stabilized to address the NRC Bulletin 88-02 concern have a sentinel plug. This option provides engineering margin against rupture and provides a demonstrated safety position through use of the sentinel plugs.

By the letter referenced above, the NRC Staff allowed termination of the PSE&G enhanced leak rate monitoring. However, PSE&G administratively, will maintain its enhanced leak rate monitoring program. This program is designed to detect steam generator tube leakage prior to tube rupture, by monitoring radiation levels in the steam generator blowdown and the condenser off gas. If primary to secondary leakage of 140 gpd is reached, indicative of a fast developing steam generator tube crack, procedures are in place at both units to commence an orderly shutdown. This leakage limit is significantly lower than the 288 gpd recommendation in NRC Bulletin 88-02.

Should there be any questions with regard to this submittal, please do not hesitate to contact us.

Sincerely,



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