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DUKE POWER

February 7, 1992

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: McGuire Nuclear Station, Unit 1  
Docket No: 50-365

Dear Sir:

On January 6, 1992, an approximate 2 gpd primary to secondary leakage was detected in Steam Generator (S/G) "D" of McGuire Unit 1. The leakage rate increased to approximately 8 gpd by January 13, 1992 and to approximately 235 gpd on January 16, 1992. At this time, a decision was made to shut the unit down to identify and repair the S/G tube leakage.

A pressure test of S/G "D" indicated leakage from tubes 36-30 and 47-46. Tube 36-30 was determined to be an inadequate bonding of the kinetically welded sleeve which had been installed during the previous outage. This tube has been plugged.

Examination of tube 47-46 identified an approximate one inch long indication approximately five inches above the 20th tube support plate. The attached action plan was developed to re-evaluate examinations performed during the 1EOC7 outage, which was completed in December 1991, and examine other tubes in all four Unit 1 steam generators. This action plan was discussed with representatives from NRC/ONRR and NRC/Region III on February 3, 1992. The following actions are also planned:

- a) Duke Power Company will share the results of the steam generator inspection efforts and our conclusions with the NRC staff prior to restart of Unit 1.
- b) Representatives from Duke Power and appropriate contractors will meet with the NRC Staff at the NRC's Rockville, Maryland offices within approximately three months to share the technical details of these inspections and results of an analysis performed pursuant to draft Regulatory Guide 1.121.
- c) Tube 47-46 will be pulled during the 1EOC8 refueling outage for laboratory examination.
- d) Technical Specification 3.4.6.2(c) primary to secondary leakage for Unit 1 will be administratively limited during the remainder of Cycle 8 to 50 gpd with Mode 3 reached within 12 hours.
- e) Further details of this event will be documented in a Licensee Event Report.

Very truly yours,

  
T. C. McMeekin

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U.S. Nuclear Regulatory Commission  
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Mr. Tim Reed  
U.S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
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Mr. P. K Van Doorn  
NRC Resident Inspector  
McGuire Nuclear Station

McGuire Nuclear Station  
January 1992 Tube Leak on 1D Steam Generator  
Recovery Action Plan

A re-evaluation of the 1991 RFO MRPC data on tube 47-46 indicates that the defect which leaked was incorrectly classified as a manufacturer's burnish mark (MBM). As such, an action plan was developed to remove tubes from service with similar MBM indications.

On Tuesday, 1/28/92, additional information was obtained which caused a significant revision to the original plan. Review of the bobbin coil data taken during this outage on tube 47-46 identified several indications between the 14th and 15th TSP's. MRPC of these indications showed them to be similar to the leak defect. The largest of these defects was sized at 60% through wall (TW) with MRPC. Review of data taken during the 1991 RFO indicated that this indication was present but was not identified for special inspection or plugging due to its very small amplitude.

To address this concern, the following action plan will be implemented:

1. Develop revised conservative criteria for analyzing bobbin coil. This criteria is such that all indications with characteristics similar to those of the 60% TW indication on tube 47-46 will be identified for further analysis.
2. Train and qualify by test all analysts on the new criteria.
3. Review all 1991 RFO bobbin coil data using the new criteria.

Because the above criteria is conservative, many indications will be called which are not actual defects. To prevent over plugging, the following methodology will be used to further screen the indications identified in the above process.

1. Reanalyze all "D" steam generator 1991 bobbin coil data first.
2. All indications that are identified from the bobbin coil data in "D" steam generator will be 100% eddy current tested using a motorized rotating pancake coil (MRPC). This data, coupled with the existing bobbin coil data, will be analyzed by recognized technical experts within Duke Power Company and/or the industry. This detailed analysis will be used to validate one of the following processes that will be used to determine the tubes which must be removed from service:

- A. MRPC test all indications called from the bobbin coil reanalysis that can not be resolved by detailed expert review. This could result in 100% MRPC test of these indications.

- B. A historical review of past bobbin coil data will be performed to identify any indications that are changing over time. Suspect indications from this process will either be plugged or MRPC tested to determine if the tube can remain in service or needs to be plugged.
3. Process A or B, or a combination of the two, will be utilized to analyze the remaining three Unit 1 steam generators to effectively remove all suspect tubes from service.