

DUKE POWER COMPANY

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August 18, 1986

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

ATTENTION: Mr. B.J. Youngblood, Director  
PWR Directorate No. 4

Subject: McGuire Nuclear Station, Units 1 and 2  
Docket No. 50-369, 50-370  
Steam Generator Tube Plugging Criteria

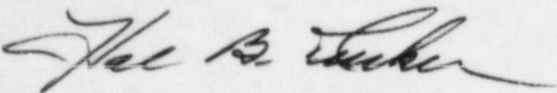
Dear Mr. Denton:

By letter dated June 24, 1986 and supplemented July 1, 1986, July 23, 1986, August 5, 1986 and August 13, 1986, Duke Power proposed changes to the steam generator tube plugging criteria in the McGuire Nuclear Station Technical Specifications to incorporate the F\* criteria for steam generator (S/G) tube plugging. Per discussions between our respective staffs, please find attached revised pages of the proposal. Only the affected pages are attached and the changes from the August 13, 1986 letter are minor wording changes and clarifications - no change to the intent of the proposal is made.

This submittal supplements an earlier proposal, thus no license fees are enclosed.

Duke Power believes that sufficient information has been submitted and discussions between our respective staffs have been sufficient to assure prompt, positive technical closure of this issue to support the scheduled August 19 entry into Mode 4 (Hot Shutdown), however, please feel free to contact us if you require any additional information.

Very truly yours,



Hal B. Tucker

JBD/66/jgm

Attachment

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Mr. Harold R. Denton  
August 18, 1986  
Page 2

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ATTACHMENT

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

#### 4.4.5.4 Acceptance Criteria

a. As used in this specification:

- 1) Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections;
- 2) Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube;
- 3) Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation;
- 4) % Degradation means the percentage of the tube wall thickness affected or removed by degradation;
- 5) Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective;
- 6) Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness. This definition does not apply to the area of the tubesheet region below the  $F^*$  distance provided the tube is NOT degraded (i.e. no indications of cracking) within the  $F^*$  distance.
- 7) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.5.3c, above;
- 8) Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg; and

NOTE 1: The application of  $F^*$  expires at the end of the fifth fuel cycle for each respective unit.

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

- 9) Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed after the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.
- 10) F\* Distance is the distance into the tubesheet from the top face of the tubesheet or the top of the last hardroll, whichever is lower (further into the tubesheet) that has been conservatively chosen to be 2 inches.
- 11) (Insert attached)
- b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.

#### 4.4.5.5 Reports

- a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2;
- b. The complete results of the steam generator tube inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following the completion of the inspection. This Special Report shall include:
- 1) Number and extent of tubes inspected,
  - 2) Location and percent of wall-thickness penetration for each indication of an imperfection, and
  - 3) Identification of tubes plugged.
- c. The results of inspections of F\* tubes shall be reported to the Commission in a report to the Director, ONRR prior to the restart of the unit following the inspection. This report shall include:
- 1) Identification of F\* tubes, and
  - 2) Location and size of the degradation.

F\* TUBE is a tube with degradation equal to or greater than 40% below the F\* distance and not degraded (i.e. no indications of cracking) in the F\* distance.