

TENNESSEE VALLEY AUTHORITY

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MAR 01 1989

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

Gentlemen:

In the Matter of the Application of ) Docket Nos. 50-390  
Tennessee Valley Authority ) 50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - NUCLEAR REGULATORY COMMISSION  
(NRC) BULLETIN 88-02, RAPIDLY PROPAGATING FATIGUE CRACKS IN STEAM GENERATOR  
TUBES

- References:
1. R. L. Gridley's (TVA) letter to NRC dated March 31, 1988, "Sequoyah Nuclear Plant (SQN) and Watts Bar Nuclear Plant (WBN) - NRC Bulletin 88-02, Rapidly Propagating Fatigue Cracks In Steam Generator (S/G) Tubes"
  2. NRC Bulletin 88-02, "Rapidly Propagating Fatigue Cracks in Steam Generator Tubes," dated February 5, 1988

Enclosed is TVA's supplemental response on the subject bulletin for TVA's WBN units 1 and 2 as committed in reference 1. With this response, TVA is completing commitment No. 3, to evaluate lessons learned related to rapidly propagating fatigue cracks in S/G tubes. Commitment No. 2, to review data from future WBN inservice inspections, is being superseded since the corrective actions identified in enclosure 1 permanently preclude the possibility of an event similar to the type experienced at North Anna, unit 1. The response is contained in enclosure 1. The commitments made in this submittal are delineated in enclosure 2.

If there are any questions concerning this issue, please telephone T. W. Horning at (615) 365-3381.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
R. Gridley, Manager  
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Regulatory Affairs

Enclosures  
cc: See page 2

PRODUCTION BRANCH  
FOR ADDITIONAL INFORMATION  
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U.S. Nuclear Regulatory Commission

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ENCLOSURE 1

The following is a supplemental response to NRC Bulletin 88-02 for WBN units 1 and 2. TVA's previous response on WBN, dated March 31, 1988, stated in part that:

TVA will evaluate lessons learned from Sequoyah and other plants related to rapidly propagating fatigue cracks in steam generator tubes as they apply to WBN, and a description of any necessary programs will be provided in a supplemental response by March 1, 1989.

TVA has applied to WBN the "lessons learned" from Sequoyah Nuclear Plant (SQN) and other plants throughout the industry to WBN and, therefore, is enhancing the previously submitted response based on the knowledge and experience gained from similar plants.

As outlined in the bulletin, plants where no denting was known to exist were required to routinely monitor the results of future steam generator tube inspections for denting and to report the results to NRC if denting is found. TVA had previously committed to this position (reference 1). In light of the lessons learned from experience at similar plants, TVA has chosen to conservatively implement paragraph C.2 of the bulletin as follows:

1. TVA will evaluate eddy current inspection data from WBN and determine the penetration depths of the antivibration bars (AVB) for WBN units 1 and 2. This information will then be used to perform a thermal-hydraulic analysis of the WBN steam generators to identify susceptible tubes.
2. Any susceptible tubes will be addressed by permanent long-term corrective actions, such as stabilization, hardware modifications, operational changes, or other suitable means.

These actions will be completed before initial startup of each WBN unit. The results of the thermal-hydraulic analysis, along with the details of the permanent long-term corrective actions, will be submitted to NRC when they become available to TVA. Since these actions will permanently preclude the possibility of a rapidly propagating fatigue crack of the type experienced at North Anna, unit 1, TVA finds it no longer necessary to review data from future inservice inspections to determine if denting is present, other than that required by technical specification inservice inspections. Therefore, the commitments described herein conservatively supersede commitment No. 2 of reference 1. Additionally, TVA believes it is not necessary to implement an enhanced primary-to-secondary leak rate monitoring program, since all suspect tubes will be permanently restrained as outlined above.

The corrective actions described herein are contingent upon the expected results of the thermal-hydraulic analysis and as-built AVB penetrations. Unexpected results, if obtained, will be submitted to NRC along with revisions to the corrective action plan when and if they become apparent.

ENCLOSURE 2

The following actions will be completed before initial startup of each WBN unit.

1. TVA will evaluate eddy current inspection data from WBN and determine the penetration depths of the antivibration bars.
2. The information from the eddy current inspection data will be used to perform a thermal-hydraulic analysis of the WBN steam generator to identify susceptible tubes.
3. Any susceptible tubes will be addressed by permanent long-term corrective actions, such as stabilization, hardware modifications, operational changes, or other suitable means. These actions will be completed before initial startup of each WBN unit.
4. The results of the thermal-hydraulic analysis and details of the permanent long-term corrective actions will be submitted to NRC when they become available to TVA.
5. Unexpected results, if obtained, will be submitted to NRC along with revisions to the corrective action plan when and if they become apparent.