

APPENDIX A

NOTICE OF VIOLATION

Tennessee Valley Authority
Watts Bar I

Docket No. 50-390
License No. CPPR-91

An NRC inspection conducted during the period July 16 through July 27, 1990 and August 27 through September 6, 1990, identified two violations of NRC requirements. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1990), these violations are set forth below.

- A. 10 CFR 50, Appendix B Criteria IX requires that special processes, including welding, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements. TVA's piping design criteria specification WB-D-40-36 and N3M-868 invokes the ASME Boiler and Pressure Vessel Code, Section III Class 3, 1971 through the Summer 1973 addenda. Paragraph ND 5212 of the ASME Code requires longitudinal weld joints in piping, pumps and valves greater than 4 inch nominal pipe size be examined by either magnetic particle, liquid penetrant or radiography. Code Interpretation III-82-19 (File NI-81-168) extends the requirement to circumferential welds. The applicable acceptance standards are those of paragraph ND-5300 for the method chosen. Paragraph ND-5321 (a) disallows any type of crack or zone of incomplete fusion or penetration when revealed by radiography while ND-5321 (b) limits any other elongated indication which has a length greater than 1/4" for thickness up to 3/4", inclusive.

Contrary to the above, the licensee failed to properly control the welding and rejectable indications in Watts Bar Class 3 piping. An NRC independent measurements inspection revealed that 50% of a sample of Watts Bar Unit 1, ASME Class 3 piping weldments had code rejectable lack of fusion and lack of penetration indications that extended to 80% of the weld length. Numerous welds displayed unacceptable ASME Code indications as determined by radiography where MT or PT had been used to accept the welds in production.
This is a Severity Level IV Violation (Supplement II).

- B. 10 CFR 50, Appendix B Criterion III requires that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the system. Also, Criteria XVI requires that conditions adverse to quality, such as deficiencies and nonconformances are promptly identified and corrected.

TVA's Design Guide DG-M5.2.1 requires an increase in minimum pipe wall thickness above that required for other design considerations when corrosion is expected. Also, the guide requires that the exterior surface of carbon steel piping should be protected against corrosion if it is subject to sweating or is located in a high moisture environment.

TVA's Nuclear Quality Assurance Plan Section 10.2.1, WBN-A1-3-1, NCM-10.2 and DCM10.3 requires conditions adverse to quality be promptly identified, documented, evaluated and corrected.

Contrary to the above, (a) the licensee did not properly design for the necessary corrosion protection for the HVAC system 31 at Watts Bar 1. Design calculations did not accommodate the required corrosion allowance of .08 inches for portions of the HVAC system 31 piping, (b) the corrosion problem was identified by TVA in December 1988. The problem was not properly or promptly documented within TVA's Quality Program on a CAQR, until the insistence of the NRC during the NDE inspection of September 1990.

This is a Severity Level IV Violation (Supplement II).