

ENCLOSURE 1

NOTICE OF VIOLATION

Tennessee Valley Authority
Watts Bar Unit 1

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

During an NRC Inspection conducted on July 13-24 and August 3-7, 1992, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

1. 10 CFR Part 50, Appendix B, Criterion III, states in part, "The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program."

Criterion III also states in part, "Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations."

Contrary to the above, the following deficiencies were identified:

- a. As of August 7, 1992, the design control measures did not ensure the stability of pipe supports using U-bolts in conjunction with pin connected standard components (struts and snubbers). For example, the U-bolt associated with pipe support 63-ISIS-R109 rotated around the pipe when a minimal load was applied. The support calculation was in error in that it specified a U-bolt torque below the value which was necessary to prevent rotation.
- b. As of August 7, 1992, the use of smaller values for seismic anchor point movements for the reactor coolant loop in calculation 0600200-03-01, Revision 17, was not coordinated or reconciled with the higher values provided by the nuclear steam supply system vendor.

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

2. 10 CFR Part 50, Appendix B, Criterion V, states in part, "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

10 CFR Part 50, Appendix B, Criterion X requires in part, "A program of inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity."

Contrary to the above, as of August 7, 1992, the licensee failed to ensure that the installation of pipe supports and conduit supports was in conformance with the design and construction documentation. The following deficiencies in the installation of safety related pipe supports and conduit supports were identified.

- a. Conduit support 1-CSP-290-N0582 was not installed even though Design Change Notice P-05916-A and Workplan KP05955A-1 required that the conduit support be installed.
- b. Certain dimensions of installed supports 63-ISIS-R120, 74-1RHR-R213, 74-1RHR-R215, and 1-03B-8 were outside the tolerance limits specified in the applicable drawings or installation instructions.
- c. Weld sizes, weld symbols and dimensions for installed supports 47A435-3-2, 1-03B-11 and 63-ISIS-V163 were inconsistent with their associated drawings.
- d. Hardware on supports 74-1RHR-R6 and 74-1RHR-V2 were not tightened per TVA specification G-43 and a support for conduit P4081 was found loose.
- e. Conduit FE2638 was not attached to its support (CSAB-11220) as required in conduit support package B10-134.

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

3. 10 CFR Part 50, Appendix B, Criterion V, states, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above, as of August 7, 1992 the licensee failed to include appropriate acceptance criteria in the following calculations and design documents:

- a. As-built weld sizes of the commodity supports were not considered in the ranking process for identification of critical cases for bounding calculations. As a result, less severely loaded supports with smaller as-built welds which could be more critical than the critical cases were not considered.
- b. Four tray support calculations (WCG-AB-1298-0442, Rev. 1; WCG-CB-1337-0509, Rev. 1; WCG-AB-1296-2208, Rev. 1; and WCG-AB-1296-2291, Rev. 1) and eight conduit support calculations (WCG-WB-CS-08, Rev. 0; WCG-AB-B2-017B, Rev. 0; WCG-AG-C50-077B, Rev. 0; WCG-AB-C27-066B, Rev. 0; WCG-AB-C9-156, Rev. 0; WCG-AB-C58-063, Rev. 0; WCG-AB-C19-

030, Rev. 0; and WCG-DGB-C4-035B, Rev. 0) did not evaluate the concrete capacity for anchor bolt pullout as required by TVA civil design standard DS-C1.7.1, Revision 5.

- c. Calculation 48W0930A107 did not address the interaction load among the anchors in each embedded plate and applied a factor of safety lower than that specified in the TVA Civil Design Standard DS-C1.7.1, Revision 5, to accept the anchors.
- d. Calculation 48N091305A022 used factors of safety lower than that specified in DS-C1.7.1, Revision 5 to qualify a surface mounted plate.
- e. Design Criteria WB-DC-40-31.7, Revision 16, specified that equipment be considered rigid if all modal frequencies are greater than or equal to 33Hz. However, the criteria also allowed equipment with frequencies less than 33Hz to be considered rigid without proper justification.
- f. In calculation 0600200-05-01, Revision 13, higher allowable stress values based on certified material test reports were utilized for determining pipe rupture locations instead of applying the lower stress values specified in the ASME, Section III Code, 1971 Edition up to and including Summer 1973 Edition, as committed to by TVA.

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

Dated at Atlanta, Georgia
this 30th day of November 1992