

ENCLOSURE 1

NOTICE OF VIOLATION

Tennessee Valley Authority  
Watts Bar 1 and 2

Docket Nos. 50-390 and 50-391  
License Nos. CPPR-91 and CPPR-92

During the Nuclear Regulatory Commission (NRC) inspection conducted on October 19, 1987 to October 30, 1987, three violations of NRC requirements were identified. These involved failure to properly control in-place storage and preservation of equipment, failure to control installation activities in accordance with prescribed procedures and drawings, and failure to perform welding in accordance with specified requirements. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR 2, Appendix C (1987), the violations are listed below:

- A. 10 CFR Part 50, Appendix B, Criterion V, as implemented TVA's Quality Assurance (QA) Topical Report, TVA-TR75-1A, Rev. 9, Paragraph 17.1.5, "Instructions, Procedures, and Drawings", requires activities that affect quality be accomplished in accordance with instructions, procedures, or drawings.

Drawings, sketches, specifications, and procedures listed below specify requirements for the construction, maintenance, and operation of the plant:

- 2-01B-172, Rev. 901, "Blowdown System Hanger 2-01B-172"
- 47A050-1B2, Rev. 4, "Mechanical Hanger Drawing General Notes"
- 47A056-55, Rev. 2, "Mechanical Category 1 Support Conduit".
- E56-55-765, Rev. 2, "Conduit and Support Variance".
- 47A050-1B3, Rev. 7, "Mechanical Hanger Drawing Notes".
- 2-01B-164, Rev. 901, "Blowdown System Hanger 2-01B-164".
- 48W1707-06, Rev. 7, "Structural Steel Plan - South Main Steam Valve Room".
- QCP 4.13, Rev. 7, "Fitup and Visual, Civil (FUVC)".
- 48W1707-24, Rev. 6, "Structural Steel Sections and Detail - South Main Steam Valve Room".
- CEP 1.60, Rev. 0, "Work Control".
- 47A056-04, Rev. 4, "Mechanical Typical Seismic Conduit Supports".

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- General Construction Specification G53, Rev. 5, "ASME Section III and Non-ASME Section III Bolting Material".
- QCP 3.03, Rev. 21, "Inspection of Electrical Conduit and Junction Boxes".

Contrary to the above, the examples listed below were not installed in accordance with drawings or sketches as indicated:

1. Spring can 2-01B-172 (Sketch 2-01B-172)
  - a. The identification tag was improperly installed.
  - b. Hanger cold set was 717 lbs. vice 682 lbs.
  - c. Only one of two stop pins was removed.
2. Conduit support 0-CSP-292-18684X (47A056-55)
  - a. A cut existed in the base metal.
  - b. An incorrect weld symbol was used on the drawing.
  - c. The weld was incomplete.
  - d. Unacceptable weld overlap existed.
  - e. Unacceptable weld splatter existed.
  - f. Flare bevel weld underfill existed.
3. Snubber 47A496-6-75 (47A050-1B3)

The hanger clamp nut was tack welded even though sufficient clearance was available to use a jam nut.
4. Restraint 2-01B-164

The weld from the shim plates to the structural steel was undersized in the wraparound area.
5. Platform 48W1707-06
  - a. The as-built configuration was not in accordance with drawing 48W1707-06.
  - b. Undersize welds existed on the beam-to-embed and beam-to-beam joints.
  - c. The weld contained unacceptable overlap and slag.
6. Platform PD07-26

There were unacceptable undercut and insufficient root reinforcement on the weld.
7. Platform PD07-040

Unacceptable weld overlap existed.

8. Platform PD07-28
  - a. Undersize welds existed.
  - b. Unacceptable overlap on welds existed.
  - c. Lack of fusion and slag on welds existed.
9. B001 Valve Support 2RTV-01A-290, 291A  
The attachment welds to process piping were painted.
10. Snubber/Strut Valve Supports 2-01A-354 and 2-01A-355  
There were misaligned support clamps.
11. Platform 48W1708-05 Detail C-6  
There was unacceptable penetration on a weld.
12. Conduit Supports 0-CSP-292-1178 and 0-CSP-292-1179
  - a. They were constructed with 3 fillet welds and a seal weld instead of 4 fillet welds as specified.
  - b. Strap bolts had no marking. Specification G-53 requires bolts be marked to designate American Society for Testing and Materials (ASTM) A-307 material.
13. Conduits 2VC-2954A (Division A) and 2PM-7418B (Division B)  
They do not meet the separation criterion of QCP 3.03.

This is a Severity Level IV Violation (Supplement II) and applies to Unit 2.

- B. 10 CFR Part 50, Appendix B, Criterion XIII, as implemented by the QA Topical Report, Paragraph 17.1.13, "Handling, Storage, and Shipping", requires that preservation of material and equipment be controlled in accordance with work and inspection instructions to prevent damage or deterioration.

Construction Engineering Procedure (CEP) 1.36, Rev. 1, "Housekeeping", requires an Assistant Construction Superintendent (ACS) to tour spaces quarterly where equipment is stored "in-place", and document evidence of damage or deterioration to equipment or material on a Housekeeping Deficiency Report.

Contrary to the above, deficiencies were not identified or documented. Examples of the failure to identify and document North and South Valve Room deficiencies are:

1. The Bailey positioner for valve 2-PCV-1-12 had open fittings.
2. An instrument line adjacent to hanger 2-032-AB-000 was damaged.
3. There were numerous instances of uncapped condulets with some rust visible in several of these condulets.
4. A broken supply line fitting to valve 2-PCV-1-30 existed.
5. A temporary support was disconnected and jammed between process pipe and valve 2-PCV-1-30.
6. Hanger pins and other loose electrical parts were found lying in the valve rooms.
7. Water had collected in the beam pocket of structural steel.
8. Corrosion was observed on devices and terminal points in electrical panel 2JB-292-1515A.
9. Several instances of broken flexible conduits and missing condulet covers were observed throughout both the North and South Valve Rooms.
10. A wooden ladder was found bearing against the motor terminal box cover of valve 2-FCV-1-15 and the flexible conduit which exits this valve.
11. Valve 2-PCV-1-12 was observed with a damaged air line from the operator diaphragm housing to the solenoid, frayed jackets on exposed wiring from the solenoid, and limit switches with missing covers and gaskets.
12. Valves 2-FCV-3-033-A and 2-FCV-3-047-B had condensation and excessive corrosion on the rotors, rotor housings, torque switches, wire terminals, and wiring. There was also evidence that water may have entered the valve motor via the wireway containing the internal motor power leads.
13. Spring can 47A427-3-9 had a bent rod.

This is a Severity Level IV Violation (Supplement II) and applies to Unit 2.

- C. 10 CFR Part 50, Appendix, B, Criterion IX, as implemented by the QA Topical Report, Paragraph 17.1.9, "Control of Special Processes", requires that special processes, such as welding be accomplished using qualified procedures in accordance with applicable codes and standards.

Final Safety Analysis Report (FSAR) Paragraph 10.3.2.2., requires the TVA class B portion of the Main Steam Line be charpy impact tested. Table 10.3-1 of the FSAR designates the applicable code for the main steam piping as The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section III, Class 2.

Paragraph NB-4310 of the ASME Code, Section III requires that only those welding processes which are capable of producing welds in accordance with the welding procedure qualification requirements of ASME Code Section IX may be used for welding pressure retaining materials or attachments thereto.

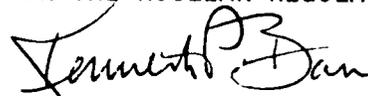
The applicable code, [ASME Code Section IX], specifies supplemental essential variables which must be considered when qualifying the weld procedure for impact tested materials.

Contrary to the above, weld procedure qualifications GT SM 11-0-2A, GT-11-0-1, GT-SM 11-0-3, and GT SM 11-0-3C, failed to qualify the weld procedure in accordance with the essential variables required for charpy impact test materials on the main steam lines. These welding procedures were used to perform welds on installed piping in Units 1 and 2.

This is a Severity Level IV violation (Supplement II), and applies to Units 1 and 2.

Pursuant to 10 CFR 2.201, TVA is hereby required to submit a written statement or explanation to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D. C. 2055 with a copy to the Director, Office of Special Projects, and a copy to the NRC Resident Inspector, Watts Bar within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) admission or denial of the violation; (2) the reason for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending the response time. If an adequate reply is not received within the time specified in this Notice, an order may be issued to show cause why the license should not be modified, suspended, or revoked or why such other action as may be proper should not be taken.

FOR THE NUCLEAR REGULATORY COMMISSION



Kenneth P. Barr, Acting Assistant  
Director for Inspection Programs  
TVA Projects Division  
Office of Special Projects

Dated at Atlanta, Georgia  
this 10<sup>th</sup> day of May 1988