

June 2, 2004

10 CFR 2.201

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Washington, D.C. 20555-0001

Gentlemen:

In the Matter of) Docket No. 50-259
Tennessee Valley Authority)

**BROWNS FERRY NUCLEAR PLANT (BFN) - NRC INSPECTION REPORT
50-259/2004-011 - REPLY TO NOTICE OF VIOLATION (NOV) EA-04-063**

Reference: 1. NRC letter, Luis A. Reyes to J.A. Scalice, dated
May 12, 2004, "Notice of Violation (Browns Ferry
Nuclear Plant Unit 1 Recovery - NRC Inspection
Report 05000259/2004011."

This letter provides TVA's reply to the subject NOV. In the
referenced NRC letter, one violation of NRC requirements was
identified, with four examples. The violation was cited for a
failure to adhere to the requirements of 10 CFR 50, Appendix B,
Criterion V, associated with the Long Term Torus Integrity
Program. TVA admits the violation.

Enclosure 1 contains TVA's reply to the NOV. Additional details
regarding TVA's overall response to this issue were presented and
discussed during the April 28, 2004 pre-decisional enforcement
conference. If you have any questions, please contact Tim Abney,
Manager of Licensing and Industry Affairs at (256) 729-2636.

Sincerely,

Original signed by:

Jon Rupert
Vice President
Browns Ferry Unit 1 Restart

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ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1**

**INSPECTION REPORT NUMBER 50-259/2004011
REPLY TO NOTICE OF VIOLATION (NOV) EA-04-063**

RESTATEMENT OF VIOLATION - EXAMPLE 1

"During an NRC inspection completed on February 13, 2004, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below.

10 CFR 50, Appendix B, Criterion V, requires 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 February 13, 2004, instructions, procedures, or drawings were inadequate or were not implemented for weld repairs to ECN P-0093 torus modifications as described below:

1. TVA procedure NEDP-5, Design Documents Review, Section 3.1.1 requires the preparer of design documents to provide an adequate and accurate solution for the problem, provide a quality product, and ensure that the design documents are complete. Section 3.1.2 requires the Checker (design verifier) to ensure that the design documents are adequate, complete and accurate.

Deficiency Fix Request Sketches for the Long Term Torus Integrity Program were inadequate, in that approximately 50 examples of deficiencies requiring repairs were not identified on the sketches. In this regard, the preparer and design verifier failed to ensure that discrepancies identified during the torus walkdowns were adequately and accurately evaluated, failed to ensure that the discrepancies requiring repair were included in engineering output documents (Deficiency Fix Request Sketches), and

failed to ensure the sketches were accurate and that required repairs were shown at the correct locations.”

TVA'S REPLY TO VIOLATION - EXAMPLE 1

1. Reason for Violation

The reason for this violation was inadequate checking.

2. Corrective Steps Taken and Results Achieved

The torus walkdown packages were reviewed against the torus Engineering sketches to determine if the required weld repairs were identified. A total of 51 required weld repairs were not identified on the sketches Engineering initially submitted to Modifications. The engineering sketches were revised to identify required weld repairs. These weld repairs were identified to Modifications and performed in the field.

Other engineering programs that could result in modifications were also reviewed to determine if the necessary modifications were identified (i.e., ampacity, breakers, Bulletin 79-14 (large bore piping), cable installation issues, cable separation, containment coatings, control rod drive hangers, drywell platforms and miscellaneous steel, environmental qualification, extended power uprate calculations, fire protection and 10 CFR 50 Appendix R, flow accelerated corrosion, fuses, Intergranular Stress Corrosion Cracking, Mechanical and I&C design changes, motor operated valve calculations, sensing lines, setpoint and scaling calculations, small bore piping, Unresolved Safety Issue A-46, Seismic II over I and voltage drop). A limited number of omissions were identified (i.e., 1 panel of fuses, 1 load fuse, 1 cable, and 1 miscellaneous steel weld). The associated design documentation to incorporate these omissions was issued to Modifications.

3. Corrective Steps That [Have Been or] Will Be taken to Prevent Recurrence

A briefing to emphasize the importance of thoroughly checking work was given to Unit 1 Restart Engineering disciplines. Appropriate personnel actions were also taken.

4. **Date When Full Compliance Will Be Achieved**

Full compliance has been achieved.

RESTATEMENT OF VIOLATION - EXAMPLES 2 AND 4

"During an NRC inspection completed on February 13, 2004, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below.

10 CFR 50, Appendix B, Criterion V, requires 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 February 13, 2004, instructions, procedures, or drawings were inadequate or were not implemented for weld repairs to ECN P-0093 torus modifications as described below:

2. The drawing titled Deficiency Fix Requests, Sketches 4 through 38, detailing corrective actions for Problem Evaluation Report (PER) 03-017339, Unit 1 Torus, Differences Between As-Built and As-Designed Configurations, show locations for repairs to welds.

Welds designated as weld numbers MS-1-WO 03017394016-008 in work order 03-017394-016, weld numbers PCI-1-WO 03017394002-029 and -30 in work order 03-017394-002, and weld numbers MS-1-WO 03017394006-047, -048, PCI-1-002-004, -005, and -006 in work order 03-017394-006, were repaired (welded) at the incorrect location. However, review of the work order documentation, specifically weld maps and data sheets, indicated the welds had been repaired. The deficient welds at these locations shown on Deficiency Fix Requests, Sketches 31 and 36 were not repaired. Approximately 20 additional welds were identified by the licensee which were repaired in the incorrect location."

4. TVA Procedure MMDP-1, Maintenance Management System, Paragraph 3.2, requires work orders to be developed to a level of detail appropriate for the circumstances which address the aspects of the work, including the scope of the work and work instructions. MMDP-1 requires that the work order specify that work is to be performed in accordance

with approved procedures, when approved procedures are available. Paragraph 3.8.1 of TVA procedure MMDP-1 requires independent/technical review of the work order to insure the work order contains detailed work steps to perform the required work prior to approval and implementation of the work order.

TVA'S REPLY TO VIOLATION - EXAMPLES 2 AND 4

1. Reason for Violation

The primary reason for the violation was that the Deficiency Fix Request sketches were confusing. The torus is comprised of 16 bays and is located below and around the drywell, with a centerline diameter of about 111 feet and a cross sectional diameter of 31 feet. It is designed to hold about 1.5 million gallons of water.

The layout of many of the 16 bays is similar and workers can become mis-oriented within the torus. Orientation information was inadvertently omitted from the Deficiency Fix Request sketches. In addition, the sketches consolidated the information for all 16 torus bays into one sketch, which provided excessive information to interpret, instead of breaking the work into sketches for each individual bay. Other causes included the use of the wrong revision of a sketch; the lack of second party scope verification; and the misinterpretation of information on the sketches.

2. Corrective Steps Taken and Results Achieved

Training was conducted regarding torus orientation and proper use of the sketches. A walkdown was conducted of those welds that were to be repaired in the torus by two independent teams. This information was used as part of the review of torus Work Orders. TVA identified 34 required weld repairs that had been omitted from the Work Orders and 24 welds that were performed in the wrong location. The work documentation was then revised to clearly identify the required weld repairs, and the work documents were reviewed by the craft to confirm they were clear and useable. Proper weld repairs were then performed in the field.

The design change control process includes a verification that the identified work scope has been completed. The torus welding work primarily involved repair activities.

The work order process for torus weld repair activities did not include a similar scope verification. The planners involved in the torus welding work were identified and their previous Work Orders for repair activities were reviewed. TVA determined that the Engineering identified scope of repair work had been properly incorporated by these planners in their previous Work Orders.

3. Corrective Steps That [Have Been or] Will Be taken to Prevent Recurrence

In order to ensure the identified work scope is incorporated into Work Orders, a checklist was developed and incorporated into the appropriate instruction. This checklist was reviewed with the Independent Qualified Reviewer. A single point of contact was established to control sketches. A briefing was given to Planning and Field Engineering personnel to emphasize the importance of accepting and issuing adequate and useable information and raising issues to management. Azimuths were marked in the torus. Appropriate personnel actions were also taken.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

RESTATEMENT OF VIOLATION - EXAMPLE 3

"During an NRC inspection completed on February 13, 2004, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below.

10 CFR 50, Appendix B, Criterion V, requires 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 February 13, 2004, instructions, procedures, or drawings were inadequate or were not implemented for weld repairs to ECN P-0093 torus modifications as described below:

3. TVA Procedure VT-6, Visual Examination of Structural Welds Using the Criteria of NCIG-01, requires quality control inspectors to perform an independent inspection of completed work activities important to safety. A requirement of the inspection procedure is independent verification that the work was performed at the correct location.

Quality Control (QC) inspection personnel failed to independently verify that welds designated as weld numbers MS-1-WO 03017394016-008 in work order 03-017394-016, weld numbers PCI-1-WO 03017394002-029 and -30 in work order 03-017394-002, and weld numbers MS-1-WO 03017394006-047, -048, PCI-1-002-004, -005, and -006 in work order 03-017394-006 were repaired at the correct location. However, review of the QC inspection documentation in the work orders indicated the welds had been repaired, inspected, and accepted by quality control inspectors. The deficient welds at these locations shown on Deficiency Fix Requests, Sketches 31 and 36 were not repaired."

TVA'S REPLY TO VIOLATION - EXAMPLE 3

1. Reason for Violation

The primary reason for the violation was that the Deficiency Fix Request sketches and weld maps were confusing, which allowed the inspectors to believe they were at the correct locations. A contributing cause was inadequate monitoring of QC inspector performance. In addition, one of the inspectors displayed a lack of independence when he relied upon a foreman to identify a weld location. This inspector relied on the foreman to find the location due to perceived time pressure given the number of inspections he had to do.

2. Corrective Steps Taken and Results Achieved

Training was conducted regarding torus orientation and proper use of the sketches and weld maps. A walkdown was conducted of those welds that were to be repaired in the torus by two independent teams. The work documentation was revised to clearly identify the required weld repairs. The revised work documents were then reviewed by the QC inspectors to confirm they were clear and useable. The weld repairs were performed in the field and accepted by QC.

3. Corrective Steps That [Have Been or] Will Be taken to Prevent Recurrence

Meetings were held with QC inspectors to stress the importance of being totally independent, having a questioning attitude, stopping their work in the event of uncertainties, and never to be schedule driven. Training was provided to the QC inspectors on the use of the Human Performance Toolbox, which provides error prevention techniques. Appropriate personnel actions were also taken.

In addition, a new QC management team was put in place; QC was re-organized by functional area; the method of assigning inspectors was modified; Level III inspectors were assigned to perform oversight of QC inspections; and the effectiveness of these corrective actions is being monitored.

4. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.