

TENNESSEE VALLEY AUTHORITY

5N 157B Lookout Place

April 17, 1986. 5:22 PM:00

U.S. Nuclear Regulatory Commission
Region II
Attention: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3 - NRC-OIE REGION II INSPECTION
REPORT 50-259/86-02, 50-260/86-02, AND 50-296/86-02 - RESPONSE TO VIOLATIONS


Enclosed is our response to J. A. Olshinski's March 4, 1986 letter transmitting Inspection Report Nos. 50-259/86-02, 50-260/86-02, and 50-296/86-02 for Browns Ferry Nuclear Plant which cited TVA with two Severity Level IV violations. On April 10, 1986, Jim Domer of my staff and Dave Verrelli of your staff discussed an extension to April 17, 1986 for responding to this violation.

If you have any questions, please get in touch with R. E. Rogers at FTS 858-2723.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. Gridley
Manager of Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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ENCLOSURE

NRC INSPECTION REPORT NOS.
50-259/86-02, 50-260/86-02, AND 50-296/86-02
JOHN A. OLSHINSKI'S LETTER TO S. A. WHITE
DATED MARCH 4, 1986

Item 1

10 CFR 50, Appendix B, Criterion III, requires that measures shall be established to assure that regulatory requirements and design basis for those systems, and components are correctly translated in drawings and procedures. These measures shall assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. The design control measures shall also provide for verifying or checking the adequacy of design.

Contrary to the above, the requirements identified above had not been met in that an inspection of pipe support and restraint systems revealed the following discrepancies:

- a. Unit 3 Reactor Building Closed Cooling Water (RBCCW) System, isometric drawing NI-370-4R contained six pipe supports. Licensee's representative could not identify any of the design calculations for the above supports or the stress analysis for the piping system. Pipe support drawing 48N1221-2 in the RBCCW system contained nine pipe supports that were classified as seismic restraints. No design calculations for these supports were found for review.
- b. Unit 2 RBCCW System, Support 9-R209, contained an incorrect assumption of shear force calculation for which the total shear force should have been used instead of one-half the shear force. Calculation sheets 12A, 12B, 12C, and 12D were not checked. The overall calculations for the support appears to be less than satisfactory in terms of thoroughness, clarity, consistency, and accuracy.
- c. Portions of the design calculations and sketches were not checked for 28 pipe supports in the Unit 2 RBCCW system. As a result, the adequacy of these supports cannot be assured for safe operation of the plant during a seismic event.

This is a Severity Level IV violation (Supplement I) and is applicable to Units 2 and 3 only.

1. Admission or Denial of the Alleged Violation

TVA admits the violation.

2. Reasons For the Violation

The calculations referenced in part a of the violation are from the basic design calculation set issued for the unit 3 RBCCW system in 1973. These calculations could not be located during the inspector's visit; however, the majority of the calculations are now available for inspection.

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The calculations referenced in parts b and c of the violation were performed in 1974. We agree that a shear force error was made in the anchor calculation for unit 2 RBCCW support 9-R209. We disagree, however, with the general comments regarding the technical accuracy of the overall calculations. The methodology and format are typical of 1974 vintage calculations.

3. Corrective Steps Which Have Been Taken and Results Achieved

IE Bulletin 79-14 was undertaken to account for differences in design and as-built configurations. Under TVA's plan for the bulletin, as outlined to NRC in the June 18, 1981 letter from L. M. Mills to J. P. O'Reilly, the integrity of the piping and supports has been evaluated per phase I of the 79-14 program for continued operation. The RBCCW piping and supports for all three units have been evaluated and documented acceptable per 79-14 phase I criteria. Unit 2 RBCCW support 9-R209 has been analyzed using the correct shear force and was found acceptable with a safety factor of two. This is consistent with IE Bulletin 79-02 criteria.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

All piping and pipe supports under the 79-14 program will have a complete set of calculations which will conform to 10 CFR 50, Appendix B, Criterion III. This is phase II of TVA's 79-14 program which completely regenerates calculations and upgrades them to a modern format for code compliance. Code compliance cannot be accomplished without the design calculations being completed, checked, and in compliance with all design control methods and procedures. Modifications resulting from the rigorous analysis of phase II will be performed under phase III of the program. As stated in earlier correspondence, modifications cannot be performed until phase II design work is complete. Also, as stated, all significant safety problems have been taken care of during phase I.

5. Date When Full Compliance Will Be Achieved

The schedule for completion of all 79-14 work will be provided in the Browns Ferry Nuclear Plant Performance Plan.

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Item 2

Appendix B of 10 CFR 50, Criterion XVI, requires that measures shall be established to assure that conditions adverse to quality, such as deficiencies, and nonconformances are promptly identified and corrected.

Contrary to the above, the licensee identified pipe support H17A in the Unit 3 RBCCW system in a nonconforming condition on July 14, 1980, during an IEB 79-14 walkdown inspection. The nonconforming condition described the condition of four anchor bolts: one was found without a nut and two others were found with loose nuts. The corrective action had not been taken at the time of NRC's inspection (1985). There was no documentation to indicate that this support should have been deleted. The licensee had performed a preliminary stress analysis to include the above support on December 16, 1985.

This is a Severity Level IV violation (Supplement I) and is applicable to Unit 3 only.

1. Admission or Denial of Alleged Violation

TVA admits the violation.

2. Reasons for the Violation

TVA's IEB 79-14 inspection on July 14, 1980, documented two loose and one missing anchor nut on support H17A for the unit 3 reactor building closed cooling water system. On July 18, 1980, it was determined by the engineering analysis group that the presence or absence of the support had no adverse effect on the computer model of the system under seismic accelerations and was, in fact, an extra support. Since the support was dispositioned as having no impact on safety, corrective action was deferred. This led to an extended delay in actually repairing the support.

3. Corrective Steps Which Have Been Taken and Results Achieved

Anchor nuts were added and tightened in August of 1985 as documented on data sheet 1 of Special Maintenance Instruction - 5.1.A. Note the corrective action was accomplished prior to the January 1986 inspection 86 06.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

Completion of the 79-14 program will provide assurance of code compliance for safety related piping. The final determination of whether or not support H17A is removed will be incorporated in the final analysis of record for the 79-14 program.

5. Date When Full Compliance Will Be Achieved

The schedule for completion of all IEB 79-14 will be provided in the Browns Ferry Nuclear Plant Performance Plan.