

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

June 19, 1985

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

Dear Dr. Grace:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - RESPONSE TO VIOLATIONS 438,439/85-12-02 - FAILURE TO FOLLOW ESTABLISHED CLEANLINESS AND FLUSHING PROCEDURES AND 438,439/85-12-03 - FAILURE TO TAKE TIMELY, EFFECTIVE CORRECTIVE ACTION

This is in response to D. M. Verrelli's letter dated May 21, 1985, report numbers 50-438/85-12, 50-439/85-12 concerning activities at the Bellefonte Nuclear Plant which appeared to have been in violation of NRC regulations. Enclosed is our response to the citations.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 858-2688.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*J. A. Domer*

J. A. Domer, Chief  
Nuclear Licensing Branch

Enclosure

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

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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ENCLOSURE  
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
RESPONSE TO SEVERITY LEVEL V VIOLATIONS  
438,439/85-12-02  
FAILURE TO FOLLOW ESTABLISHED CLEANLINESS AND FLUSHING PROCEDURES,  
AND 438,439/85-12-03  
FAILURE TO TAKE TIMELY, EFFECTIVE CORRECTIVE ACTION

Noncompliance Item - Severity Level V Violation - 438,439/85-12-02

10 CFR 50, Appendix B, Criterion V, and the accepted quality assurance program (TVA-TR-75-1A, revision 8), section 17.1.A.5 requires, in part, that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. This includes procedures to ensure that activities affecting quality be accomplished under suitably controlled conditions, such as adequate cleanliness.

Bellefonte Nuclear Plant (BLN) CTP-6.1, revision 5, section 6.6 requires maintenance of system cleanliness after cleaning/flushing by control or system boundaries. Section 6.6.1.4 requires notification to the Office of Nuclear Power (NUC PR) that a system has been layed up following cleaning/flushing. Section 6.6.2 requires documentation of completion of work requiring access to clean system. Section 6.6.2.2.4 requires that the Flushing Engineering Unit (FEU) attach and/or remove flush tags, as applicable, to indicate new boundaries, if flush boundaries are affected by work on a system.

Contrary to the above, activities affecting quality were not being accomplished in accordance with documented procedures, in that an inspection of postflushing cleanliness control revealed the following discrepancies from the documented requirements:

- a. No notifications of layup (attachment V) have been issued since implementing the requirements although many safety-related systems are in layup following flushing/cleaning.
- b. Flush tags were not attached and/or removed to indicate new boundaries when work on safety-related systems affected established flush boundaries.
- c. Construction System Engineers were not consistently documenting completion of work within established cleanliness boundaries by signing and dating attachment Q to CTP-6.1, revision 5.

TVA's Response

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

## 2. Reason for Violation

- a. The purpose of notifications of layup (attachment V to CTP-6.1, revision 5) being issued by FEU is to request NUC PR to begin performing water chemistry analysis checks on a regular basis to ensure that layup solution satisfies design requirements. The majority of the systems that have been flushed/cleaned are being maintained in a dry layup condition, and notifications are not necessary because no solution checks are required. Many other systems are put into service after flushing and the requirements of layup do not apply.
- b. The removal and reattachment of flush tags is required to be performed during clean system entries to properly define the clean system boundary. The purpose of hanging flush tags is to provide notification that the system is clean and to prevent inadvertent entry of contamination into the cleaned system. The requirement to utilize flush tags resulted from a commitment by TVA in a 10 CFR 50.55(e) item, nonconformance report (NCR) 2991, "Contaminated Makeup and Purification Piping." This requirement, in addition to the layup requirements, became effective in August 1984. The NRC closed the 10 CFR 50.55(e) item in inspection report 438,439/85-07. The actual hanging of flush tags after flushing has been adequately implemented. The process of removing and replacing tags during system entries has not been adequately performed because many systems were in a dry layup condition and no potential for contamination existed. Additionally, the tags were not adjusted on systems during entries involving hydrostatic tests because water quality and quality control verification of valve lineups was rigidly controlled by the hydrostatic test packages. System entries not involving hydrostatic tests are controlled by Sequence Control Charts (SCCs) which require quality control verification of system cleanliness prior to reclosing the system entry. Because of the additional controls mentioned, the actual removal and replacement of flush tags was not considered necessary. No cases of system contamination resulting from hydrostatic tests or clean system entries have been identified, and TVA believes the clean system integrity has been maintained.
- c. The inconsistent documentation of completion of work resulted from inattention by responsible personnel to followup the work activity by making the appropriate entry in the clean access entry log. Once again, the need to make access log entries after completion of work was not emphasized because the system cleanliness integrity was maintained by the SCC or hydrostatic test package.

## 3. Corrective Steps Taken and Results Achieved

- a. Notifications of layup (attachment V) for all flushed systems have been forwarded to NUC PR.
- b. A review is being performed to determine which systems have current clean system entries in process. Those systems will be evaluated, and flush tags will be replaced or removed as necessary.

- c. A review of the clean access entry log has been performed, and the log is being updated to reflect current systems status with respect to completion of work.

4. Corrective Steps Taken to Avoid Further Noncompliance

A joint meeting of responsible flushing and mechanical engineering personnel will be held to provide working level input to improve the effectiveness and use of the governing procedure. The FEU will be retrained in the requirements of paragraph 6.6 of BLN CTP-6.1, revision 5.

5. Date When Full Compliance Will Be Achieved

TVA will be in full compliance by June 30, 1985.

Noncompliance Item - Severity Level V Violation - 438,439/85-12-03

10 CF 50, Appendix B, Criterion XVI, and the accepted quality assurance program (TVA-TR-75-1A, revision 8), section 17.1.16, requires that measures be established to assure that conditions adverse to quality, such as deviations, are promptly identified and corrected.

Contrary to the above, the licensee's measures did not assure prompt correction of deficiencies identified in their quality assurance surveillance program in November 1984, concerning control of system cleanliness after cleaning/flushing. These deficiencies were identified under TVA Quality Deviation Report No. BL-S-85-093-D01. To date, no corrective action has been implemented.

TVA's Response

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reason for Violation

When TVA responded to the quality assurance surveillance deviation in November 1984, a commitment was made to revise BLN CTP-6.1 to improve the effectiveness of the procedure. This procedure is one of the most detailed and complex of any at BLN. The revision process to this procedure is time consuming because of the many levels of review and concurrence by organizations other than the Office of Construction (OC) at BLN. In addition, revisions of upper-tier requirements has contributed to the slow nature of the revision process.

When the quality assurance surveillance deviation was cited, responsible management personnel did not perform an adequate evaluation of the circumstances surrounding the deviation, and the problems were not elevated to the appropriate level of attention to produce an effective, timely implementation of corrective action.

3. Corrective Steps Taken and Results Achieved

BLN's flushing program is currently being updated to comply with the requirements of BLN CTP-6.1, revision 5. These actions will resolve deficiencies which were identified by TVA Quality Deviation Report No. BL-S-85-093-D01.

4. Corrective Steps Taken to Avoid Further Noncompliance

Meetings will be held between management and line personnel in the future to discuss and evaluate any findings that indicate deficiencies in the flushing program. Management involvement will be increased during the initial decisions regarding corrective actions and methods of implementing corrective actions in a timely manner. This policy is to be implemented by way of a memorandum to all responsible personnel.

5. Date When Full Compliance Will Be Achieved

TVA will be in full compliance by July 30, 1985.