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SUBJECT: Responds to NRC 880316 ltr re violations noted in Insp Repts 50-438/87-09 & 50-439/87-09.

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MAY 04 1988

U.S. Nuclear Regulatory Commission
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Gentlemen:

BELLEFONTE NUCLEAR PLANT (BLN) UNITS 1 AND 2 - NRC REGION II INSPECTION REPORT NOS. 50-438/87-09 AND 50-439/87-09 - RESPONSE TO VIOLATION

Kenneth P. Barr's letter to S. A. White dated March 16, 1988, transmitted NRC Inspection Report Nos. 50-438/87-09 AND 50-439/87-09 for BLN. This report cited TVA with one violation: 50-438, 439/87-09-01, Severity Level IV (Supplement II). Enclosure 1 is the response to this violation, and enclosure 2 is a list of commitments.

A delay in submitting this response to April 29, 1988, was discussed with NRC Region II Inspector Steve Elrod on April 12, 1988.

If you have any questions, please telephone D. L. Terrill at (205) 574-8820.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

MAY 04 1988

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ENCLOSURE 1
RESPONSE NRC INSPECTION REPORT
NOS. 50-438, 439/87-09-01
KENNETH P. BARR'S LETTER TO S. A. WHITE
DATED MARCH 16, 1988

During the Nuclear Regulatory Commission (NRC) inspection conducted on September 19, 1987 to November 25, 1987, a violation of NRC requirements was identified. The violation involved inadequacies in the layup and equipment preservation program. In accordance with the "General Statement of Policy and Procedure for NRC enforcement Actions," 10 CFR 2, Appendix C (1987), the violation is listed below:

10 CFR 50, Appendix B, Criteria V and XIII, as implemented by TVA's Quality Assurance Topical Report, TVA-TR75-1A, Rev. 9, paragraphs 17.1.5 and 17.1.13, required that activities affecting quality shall be prescribed by documented instructions and procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions and procedures; and measures shall be established to control the handling, storage, shipping, cleaning, and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. These requirements are further implemented in BLE10, Rev. 7, "Long-Term Preservation and Maintenance of Plant Equipment" and BNP-QCP-1.3, Rev. 8, "Preventive Maintenance."

Contrary to the above, instructions and procedures for activities that affect quality were not being complied with for auxiliary feedwater (AFW) pumps 1A and 2A and the steam driven auxiliary feedwater pump (Criteria V) and safety-related equipment was not being maintained in a manner to prevent damage or deterioration (Criteria XIII) in that:

- The makeup and purification system and portions of the emergency raw cooling water (ERCW) system were not in the required dry layup condition.
- Portions of the AFW system were not completely drained as required.
- Required documentation for AFW pump oil inspections and motor rotation could not be located. The licensee could not confirm through other means that the preventive maintenance had been performed.
- The steam driven AFW pump was located in a room that did not have the required humidity and temperature control.
- The vendor requirement to have the steam driven AFW pump governor filled with oil was not met.

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

- The makeup and purification system was not in the required dry layup condition.

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation

During the layup of the Makeup and Purification (NV) system in August 1986, establishing a dry system was accomplished by passive draining. The NV system has enclosed drains and the presence of water was determined through acoustic detection after the drain valve was opened. A solenoid valve was signalled to open and failed to operate properly. This resulted in water being retained in a portion of one of the four high pressure injection (HPI) lines.

During the NRC inspection, another NRC group (NDE van) was onsite performing radiographic inspections. The radiographic examination of a weld in the subject HPI line revealed the presence of approximately 3/4 inch of water in the line. A manual isolation valve upstream of the solenoid valve was opened and a threaded cap removed on a branch line between the valves which allowed the trapped water to exit from the system.

3. Corrective Steps Which Have Been Taken and Results Achieved

The solenoid valve has since been inspected and retested with the results showing no abnormalities with the valve, the controls, the switch, or the circuitry. The valve has been opened to drain the remaining water.

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

Since original layup of the NV system was established, Engineering Requirements Specification ER-BLN-MEB-001-R0 was issued in September 1987, which requires blowing dry air (Less than 40% relative humidity) through the system in addition to the passive draining. This additional requirement will ensure that trapped water is removed from the system and should prevent recurrence of the identified problem. The layup instruction BLLI-NV is being revised to expand the scope of drainage verification. Additional locations of places to check the NV system for the presence of water will be included in the walkdown checklist (an attachment of the layup instruction).

5. Date When Full Compliance Will Be Achieved

The blowdrying of the four high pressure injection (HPI) lines will be completed by October 31, 1988, and the remaining portions of the NV system will be completed by March 31, 1989.

- Portions of the Emergency Raw Cooling Water (ERCW) System were not in the required layup condition.

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation

The component cooling water heat exchangers 1KC-MHX-006-A and 1KC-MHX-007-B were left unattended, with Essential Raw Cooling Water (ERCW) side drain valves opened and drain hoses attached, for 7 months after the decision was made to place them in dry layup. During that time the drain valves were inadvertently closed allowing accumulation of water on the ERCW side due to leaking tube weld plugs in 1KC-MHX-006-A and a leaking tube in 1KC-MHX-007-B.

3. Corrective Steps Which Have Been Taken and Results Achieved

Leaks have been identified and documented on Condition Adverse to Quality Reports (CAQRs) BLN870002 and BLN870001. Blanks have been installed to isolate both heat exchangers from the Component Cooling Water (KC) system. Each heat exchanger has been drained, mechanically cleaned on the ERCW side, and air dried.

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

The tube and shell side of the heat exchangers will be maintained in a dry state and monitored through the Preventative Maintenance (PM) program.

5. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by June 30, 1988.

- Portions of the AFW system were not completely drained as required.

  1. Admission or Denial of the Alleged Violation

     TVA admits the violation occurred as stated.

  2. Reasons for the Violation

     The need to remove the pump casing drain plug was not recognized and was omitted from the layup instruction for the AFW system. The pump drain valve was opened to allow for water drainage, but was not sufficient to remove all water from the casing and the pressure relief line (pump flow balance piping, as stated in NRC report). The air purge performed during the initial stage of the layup failed to remove all of the water from the pump casing.

  3. Corrective Steps Which Have Been Taken and Results Achieved

     All AFW pumps have been disassembled and blown dry to remove all water and condensation from the pump casing and the pressure relief line. No visual defects were noted.

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

     The Preventative Maintenance (PM) program has been revised to require semi-annual inspections of the inside of the pump casings to detect any buildup of condensation.

  5. Date When Full Compliance Will Be Achieved

     TVA is now in full compliance.

- Required documentation for AFW pump oil inspection could not be located.

  1. Admission or Denial of the Alleged Violation

     TVA admits the violation occurred as stated.

  2. Reasons for the Violation

     Inadequate review of vendor documentation resulted in the omission of an oil inspection from the preventative maintenance (PM) program.

3. Corrective Steps Which Have Been Taken and Results Achieved

A review of vendor documentation for the AFW system for inclusion in the PM program was ongoing during the NRC inspection and the oil inspection requirement had been recognized. The inspection requirement was input into the PM data base on November 9, 1987. The bearing oil was inspected and subsequently replaced.

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

Due to the small size of the bearing reservoirs, a PM code has been added to the PM data base to drain and replace the oil in the reservoirs on a yearly basis instead of analyzing the oil to determine if it is within specifications.

5. Date When Full Compliance Will Be Achieved

TVA is now in full compliance.

- Required documentation for AFW motor rotation could not be located.

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation

Inadequate control of the PM data base resulted in shaft rotation frequency being improperly deleted. Rotation was not being performed during the period the NRC had selected for review, therefore documentation did not exist.

3. Corrective Steps Which Have Been Taken and Results Achieved

The appropriate PM code has been added to the PM data base to perform motor shaft rotation in accordance with vendor requirements.

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

The revised form now being used for data base changes requires the signatures of the cognizant engineer and the section supervisor. An additional Quality Assurance (QA) signature is required for safety-related systems. The requirement of these signatures on the data base change form is providing better control of the data base.

5. Date When Full Compliance Will Be Achieved

TVA is now in full compliance.

- The steam driven AFW pump located in a room that did not have the required humidity and temperature control.

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation

Inadequate review of the vendor manual for requirements relating to the storage of the turbine prior to being put in service resulted in an oversight of the requirement to avoid abrupt or large changes in temperature.

3. Corrective Steps Which Have Been Taken and Results Achieved

The AFW pump room has been isolated from the atmosphere and is being environmentally controlled by the plant HVAC system, which will ensure the required temperature and humidity control.

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

The AFW system layup instruction has been reviewed and compared with the vendor manual to ensure that all recommended environmental ambient requirements are being met.

5. Date When Full Compliance Will Be Achieved

TVA is now in full compliance.

- The vendor requirement to have the steam driven AFW pump governor filled with oil was not met.

1. Admission or Denial of the Alleged Violation

   TVA admits the violation occurred as stated.

2. Reasons for the Violation

   Inadequate review of the vendor manual for requirements relating to the storage of the turbine prior to being put in service resulted in an oversight of the requirement to fill the Woodward governor with oil.

3. Corrective Steps Which Have Been Taken and Results Achieved

   The governor has been filled with oil. Vendor requirements have been met. Condition Adverse to Quality Report (CAQR) BLN880005 has been issued to document the inadequate review of vendor manuals for applicable vendor requirements.

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

   The AFW system layup instruction has been reviewed for compliance with the vendor manual.

5. Date When Full Compliance Will Be Achieved

   TVA is now in full compliance.

ENCLOSURE 2

LIST OF COMMITMENTS
FOR BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2

1. TVA will maintain and monitor the tube and shell side of the heat exchangers in dry layup by June 30, 1988.

2. TVA will blow dry the Makeup and Purification (NV) system by March 31, 1989.

3. TVA will blow dry the four NV high pressure injection lines by October 31, 1988.

4. The layup instruction BLLI-NV will be revised to expand the scope of drainage verification.