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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Combined Inspection Report 50-334/93-26 and 50-412/93-28
Reply to Notice of Violation

In response to NRC correspondence dated December 14, 1993, and in accordance with 10 CFR 2.201, the attached reply addresses the Notice of Violation transmitted with the subject inspection report.

If there are any questions concerning this response, please contact Mr. N. R. Tonet at (412) 393-5210.

Sincerely,

J. D. Sieber

Attachment

cc: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. G. E. Edison, Project Manager
Mr. J. C. Linville, Chief, Project Branch No. 3
Division of Reactor Projects, Region I

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ELECTRIC UTILITY of THE YEAR 1993

DUQUESNE LIGHT COMPANY
Nuclear Power Division
Beaver Valley Power Station, Unit Nos. 1 and 2

Reply to Notice of Violation

Combined Inspection Report 50-334/93-26 and 50-412/93-28
Letter dated December 14, 1993

VIOLATION A (Severity Level IV; Supplement I)

Description of Violation (50-334/93-26-01, 50-412/93-28-01)

Unit 1 and Unit 2 Technical Specification 6.8.1.a requires that written procedures be established, implemented, and maintained, covering activities listed in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Four instances of failure to correctly implement operational procedures occurred as listed below:

1. Operating Manual Procedure 6.4E, "Filling and Venting an RCS Loop with Fuel in the Vessel," Issue 4, Revision 0, specifies, in part, that the 480V breaker control handles for loop 'C' hot and cold leg isolation valves shall not be placed in the "on" position. Technical Specification 3.4.1.4 requires, in part, that the RCS isolated loop stop valves shall have power removed from the associated valve operators whenever and RCS loop has been isolated in Mode 5. Contrary to the above, on November 1, 1993, breaker control handles for MCC1-18, cubicles U and V, were placed to the "on" position and energized the 'C' loop stop valves while in cold shutdown conditions with the 'C' loop isolated.

2. Operational Surveillance Test 1.47.3A, "Three Month Containment Isolation and ASME Section XI Test," Issue 2, Revision 7, specifies that fuel pool heat exchanger reactor plant component cooling water inlet isolation valve TV-1CC-128, be stroked timed from full closed to full open. Technical Specification 4.0.5 requires, in part, that TV-1CC-128 be tested to the open position per ASME Section XI testing. Contrary to the above, on July 31, 1993, TV-1CC-128 was stroke tested to the closed position.

3. Step A.7 in Operations Manual Procedure 2.50.4 requires verification that the shift supervisor clearance is in effect on the incore nuclear instrumentation. Contrary to the above, on November 19, 1993, an operator initialed for completion of this step without the shift supervisor clearance in effect.

4. Operational Surveillance Test 2.11.3 requires 2CHS-37 to be verified closed if the plant is in Mode 4 or 5. Contrary to the above, on November 5, 1993, with the plant in Mode 5, an operator erred in indicating that the valve was closed, when, in fact, the valve was open.

Reason for Violation

In each of the four instances, the operators involved failed in their attention to the details required to correctly implement the appropriate procedures. It has been determined that a lack of self checking is common to all of the identified events. In the case of the improper stroking of TV-1CC-128, the procedure (OST 1.47.3A) strokes many valves from the open to the closed position, with TV-1CC-128 being an exception in that it is stroked from closed to open. In this case, while self checking was necessary, the procedure could have better identified this valve as an exception. In summary, a lack of attention to details and self checking was the cause of the events.

Corrective Action Taken

For each of the four instances, a plant Problem Report was initiated to evaluate the event in order to determine reportability, cause and corrective actions needed. The first two instances were determined to be reportable and Unit 1 LERs 93-014 and 93-015 were submitted.

The operators involved with the events were counseled, or were subject to disciplinary action, regarding their inattention to detail and lack of self checking techniques. The four events were discussed as part of shift briefings held with each operating crew. The procedures involved will be evaluated for adequacy and any necessary changes will be incorporated.

Action Taken to Prevent Recurrence

A licensed control room supervisor and an Operations Manager will discuss the events leading to the violation in licensed and non-licensed operator retraining sessions. Emphasis will be placed on the cause for the events, the need for procedural compliance and a review of the administrative guidelines regarding procedural compliance.

Date When Full Compliance Will Be Achieved

We are in full compliance at this time. Corrective actions will be completed by April 1, 1994.

VIOLATION B (Severity Level IV; Supplement I)

Description of Violation (50-412/93-28-02)

10 CFR Part 50, Appendix B, Criterion III (Design Control) requires, in part, that measures be established to assure that regulatory requirements and design basis are correctly translated into design documents.

BVPS Unit 2 FSAR, Section 7.2.1.1.4, Coolant Temperature Sensor Arrangement, states, in part, that hot and cold leg temperature signals required for input to the reactor protection functions are obtained using thermowell mounted resistance temperature detectors (RTDs) installed in each loop.

Contrary to the above, the licensee failed to establish adequate design control measures for the installation specification of reactor coolant system RTDs installed under Design Change Package 1469 in September 1990. The RTDs were installed in a configuration without adequate thermal insulation to protect against convective heating. The installation was not consistent with environmental qualification test report N9004-87-A used to determine the effects of ambient temperatures on the temperature inside the RTD head.

Reason for Violation

1. Lack of thermal insulation at the RTD thermowell permitted convective heating of the RTD weather head to a temperature above its intended design temperature.

2. The installation specification did not provide sufficient detail to ensure that the RTD installation was in accordance with the vendor's recommendations. The thermal insulation requirements were not adequately incorporated into the installation specification.

Corrective Action Taken

1. All twelve RTDs at Beaver Valley Unit 2 (BV-2) were replaced through Design Change Package (DCP) 2045. This included nine RTDs on the reactor coolant system hot legs and three on the reactor coolant system cold legs. All twelve associated conduit seals which may have been exposed to the high temperatures experienced by the RTD heads were also replaced.

2. Samples of the wire from each RTD were sent to the University of Tennessee for analysis. Testing was performed to determine the peak temperatures experienced by each RTD. Testing confirmed that not all twelve RTDs experienced temperatures that would adversely affect their qualified life. Therefore, replacement of all RTDs was a conservative action.

3. Thermal insulation was added around each RTD per the requirements of DCP 2045 installation specification to protect the RTDs from the effects of convective heating. Insulation gaps at the loop isolation valves were also identified and repaired. Additionally, a vendor-recommended, tiered heat diffusing shield was added to the RTD assemblies as additional thermal protection.

4. Post modification testing was performed by taking temperature readings at the RTD weather heads with a contact pyrometer, while the plant was operating at Mode 3 (547°F). The data was then extrapolated to conditions expected at normal operating conditions. These temperature readings were made to verify that the RTD heads would not exceed their qualified lives before the next refueling outage and that the corrective actions taken eliminated the high temperature problems. This testing confirmed the calculated temperature bounded the as-tested value.

5. Contact Integrating Thermal Monitors were installed at each RTD location in order to determine the temperature at each RTD over a full cycle of operation. These temperature monitors provide a peak temperature and an integrated, average ambient area temperature seen by each RTD weather head. The values received by these monitors will then be used to update qualified life calculations if necessary.

6. A review was performed of the corresponding Beaver Valley Unit 1 (BV-1) design installation which included taking contact pyrometer readings at the location where the worst conditions were expected. Based on the information known and gathered, the BV-1 installation is acceptable.

Action Taken to Prevent Recurrence

The engineering personnel responsible for preparation of installation specifications and modification work packages will be trained on the violation and the generic implications of the violation.

Date When Full Compliance Will Be Achieved

We are in full compliance at this time. Training will be completed by June 30, 1994.