VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

June 15, 1995

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. 95-278
SPS/BCB/ETS R7
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION REPORT NOS. 50-280/95-06 AND 50-281/95-06

We have reviewed Inspection Report Nos. 50-280/95-06 and 50-281/95-06 dated April 14, 1995 and your May 18, 1995 letter and enclosed Notices of Violation for Surry Unit 2. We share your concern regarding the effectiveness of the Measuring and Test Equipment (M&TE) Program and the resolution of the two Deviation Reports which documented discrepancies associated with the pressurizer protection instrument channels. We have implemented actions to strengthen our performance in these areas.

As discussed at our April 24, 1995 enforcement conference, a special Quality Assurance (QA) Audit of the Measuring and Test Equipment (M&TE) Program was performed to evaluate the overall program and its implementation. This QA audit has recently been completed and concluded that portions of the M&TE Program do not fully meet our Operational QA Program for the Control of M&TE Equipment and that portions of the program implementation have been ineffective. The preliminary QA audit findings have been presented to management and are being finalized. These preliminary findings are discussed in the attached response to the violations.

Based on management's concern for the implementation of appropriate corrective actions, a Root Cause Evaluation (RCE) of the Corrective Action Program was initiated in late 1994. The RCE was completed in April, 1995 and concluded that the Corrective Action Program is effective at identifying, documenting, and determining the cause of station deviations. However, opportunities to improve the Corrective Action Program were identified and actions to implement these opportunities are underway. These efforts are also discussed in the attached response to the violation.

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We have no objection to this letter being made a part of the public record. Please contact us if you have any questions or require additional information.

Very truly yours,

R.J. Saunders for

James P. O'Hanlon
Senior Vice President - Nuclear

Attachment

cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION CONDUCTED JANUARY 22 - FEBRUARY 11, 1995
SURRY POWER STATION UNITS 1 AND 2
INSPECTION REPORT NOS. 50-280/95-03 AND 50-281/95-03

Violation A

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

The violation occurred as a result of the Unit 2 pressurizer pressure protection transmitters being calibrated using a pressure gauge that was not temperature compensated and without accounting for subatmospheric containment conditions. The net effect of these two factors resulted in each of the three pressurizer pressure protection transmitters being miscalibrated high by approximately 15 psi from June 24, 1994 to February 3, 1995.

The Root Cause Evaluation (RCE) Team, established to investigate this event, concluded that the Maintenance Department Metrology Laboratory personnel's lack of knowledge led to the purchase and use of a pressure gauge that was not temperature compensated. The RCE Team also concluded that the effects of subatmospheric conditions were not accounted for in the calibration procedures.

A copy of the RCE was provided to the NRC. Additional details were also provided in Licensee Event Report 50-281/95-003-01.

2. Corrective Steps Which Have Been Taken and the Results Achieved

A multidiscipline Root Cause Evaluation (RCE) Team investigation was initiated on February 23, 1995 to determine the cause of this event and to recommend corrective actions. Approved corrective actions resulting from the RCE include:

- Mechanical Heise gauges that are not compensated for temperature have been removed from the M&TE Program.

- Equipment calibrations that were performed with mechanical Heise gauges that are not compensated for temperature have been reviewed. No safety significant equipment required re-calibration.

- Transmitter calibration procedures have been revised to include a precautionary statement to preclude their use at subatmospheric conditions.

- Quality Assurance (QA) performed an audit of the Measuring and Test Equipment (M&TE) Program. The M&TE audit concluded that portions of the M&TE Program do not fully meet the Operational QA Program for the Control of M&TE Equipment and portions of the program are not being effectively

implemented. Corrective actions resulting from the audit are discussed in Section 3.

3. Corrective Steps Which Will be Taken to Avoid Further Violations

The following corrective actions are being implemented, as discussed at the April 24, 1995 enforcement conference and in Licensee Event Report 50-281/95-003-01.

- A review of equipment calibrations that were performed with digital gauges that are not compensated for temperature will be completed by the end of July 1995.

- M&TE data sheets will be revised by the end of June 1995 to specify the purchase of temperature compensated gauges only.

- Training programs are being revised to include a detailed discussion regarding the use of temperature compensated gauges and gauges that are not compensated for temperature. This action will be completed by October 1995

- Transmitter calibration procedures will be revised by October 1995 to provide instructions for performing calibrations in subatmospheric conditions. Prior to any calibrations above cold shutdown conditions the current calibration procedures will be revised to include instructions for performing calibrations in subatmospheric conditions.

Management has reviewed the results of the QA audit of the M&TE Program. The audit identified weaknesses in the following areas:

- M&TE Program controls
- Use of uncalibrated standards and M&TE
- Recording of usage data
- Performance of evaluations to determine the need for retesting
- Storage and identification of M&TE
- Failure to trend M&TE related deficiencies

These audit findings are being finalized and will be resolved in accordance with the QA Program. The resulting corrective actions will be provided to the NRC Resident Inspectors.

4. The Date When Full Compliance Will be Achieved

Full compliance was achieved when the Unit 2 pressurizer pressure protection transmitters were calibrated on February 10, 1995.

Violation B

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

Instrumentation and Controls (I&C) Department personnel submitted Deviation Report (DR) S-94-1352 on June 24, 1994 which identified an indication discrepancy between the Unit 2 pressurizer pressure control and protection channels. I&C personnel investigated the condition and concluded that an error may have occurred when the pressurizer pressure protection transmitters were calibrated. This determination was supported by the personnel involved, who indicated that the Heise gauge may have been misread. Therefore, the transmitters' calibration was checked, found to be low by approximately 30 psi, and was adjusted on June 24, 1995.

Operations Department personnel submitted DR S-94-1353 on June 25, 1994 to document a pressurizer low pressure alarm that was received during the unit startup. The DR also noted that the pressurizer protection channels were indicating approximately 15 to 20 psi higher than the pressurizer control channels.

DRs S-94-1352 and S-94-1353 were assigned to the I&C Department to determine the cause of the identified conditions and to implement appropriate corrective actions. I&C Department personnel reviewed each DR and concluded that the DRs reported the same condition. Several factors lead to this conclusion. The DRs were in sequential order, submitted by different departments, and were assigned to the I&C Department on the same day. In addition, DR S-94-1352 did not describe the exact nature of the discrepancy that had been noted between the Unit 2 pressurizer pressure control and protection channels.

DR S-94-1353 was closed on July 14, 1994, since it was mistakenly believed to be redundant to DR S-94-1352. DR S-94-1352 was closed on August 4, 1994 based on the I&C Department's conclusion that a personnel error in reading the pressure gauge when the transmitters were initially calibrated had caused the transmitters to be out of adjustment on June 24, 1994.

The actual causes of the discrepancies documented by DRs S-94-1352 and S-94-1353 were identified in April 1995 by the Root Cause Evaluation (RCE) Team that was established to investigate the calibration discrepancies identified in February, 1995. The RCE Team determined that the transmitters were out of calibration on June 24, 1994 as a result of binding in the pressure gauge used to calibrate the transmitters and a zero shift that had occurred in the transmitter calibration as the unit had heated up. These factors accounted for a total error of 30 psi.

1. Reason for the Violation, or, if Contested, the Basis for Disputing the Violation (continued)

The RCE Team also determined that the discrepancy that had been noted between the pressurizer pressure control and protection channels on June 25, 1994 (DR S-94-1353) resulted from the Unit 2 pressurizer pressure protection transmitters being calibrated on June 24, 1994 using a pressure gauge that was not temperature compensated and without accounting for subatmospheric containment conditions. The net effect of these two factors resulted in each of the three pressurizer pressure protection transmitters being miscalibrated high by approximately 15 psi.

Although there were several mitigating circumstances as described above, both DRs were closed by August, 1994 without identifying the actual causes of the discrepancies. In reviewing both DRs, the I&C Department concluded that the DRs documented the same deviating condition and did not adequately question the need for additional investigation of the second DR. Their investigation of these deviating conditions led to the belief that the cause for the anomalous but common indications exhibited by the pressure protection channels was understood and had been corrected by the calibration at Hot Shutdown. The DR disposition was subsequently reviewed and closed in accordance with the corrective action process.

2. Corrective Steps Which Have Been Taken and the Results Achieved

The concerns and management initiatives related to our Corrective Action Program were discussed with NRC staff at a Virginia Power requested management meeting on January 25, 1995. As stated at that meeting, several continuing initiatives were instituted to communicate and reinforce management's expectations and standards:

- Coaching to reinforce the need for clear communications and a questioning attitude
- Emphasizing the Nuclear Safety Policy and sensitivity to compliance with requirements
- Ensuring degraded conditions are identified and corrective actions are promptly initiated
- Emphasizing the need for personnel to exhibit ownership

As a result of management's awareness and concern regarding the implementation of appropriate corrective actions, RCE 94-21, Corrective Action Process, was initiated in late 1994. RCE 94-21 assessed the effectiveness of the corrective action process in the resolution of recent station events. The RCE was completed in April 1995 and concluded that the Corrective Action Program is effective at identifying, documenting, and determining the cause of station deviations. The RCE recommended certain actions to improve the preparation of a Deviation Report (DR) and the evaluation of the deviating condition.

2. Corrective Steps Which Have Been Taken and the Results Achieved (continued)

As part of the actions outlined during the management meeting on January 25, 1995, management is stressing the need for exhibiting a questioning attitude and conservative decision making through coaching on activities to resolve deviating conditions. In addition to documenting an inoperable condition, a DR is prepared to document degraded and/or alert conditions. Communications among the disciplines involved in resolving a problem is emphasized. Expectations and ownership are established early. These techniques were utilized effectively to enhance nuclear safety during the 1995 Surry Unit 2 Refueling Outage and other significant activities in 1995.

A memorandum has been issued to station employees by the station manager outlining the expectations of each employee for information that is to be supplied in preparing a DR. The memorandum also reinforces maintaining a low threshold for identification of deviating conditions. Expectations for utilizing a questioning attitude during evaluation of a deviating condition are outlined and explained. The techniques for evaluating the deviating condition include an examination of any recent and previous DR concerning the same equipment. Supervisors will review this memorandum with their employees.

3. Corrective Steps Which Will be Taken to Avoid Further Violations

In addition to the ongoing management coaching and the management memorandum on the Deviation Reporting process, training will be provided to appropriate station personnel during 1995. This training will reinforce understanding of the deviation reporting process.

4. The Date When Full Compliance Will be Achieved

The RCE on the Corrective Action Program concluded that the program was effective at identifying, documenting, and determining the cause of station deviations. The improvements recommended in the RCE, as discussed above, are ongoing and will be completed by December 31, 1995. Full compliance was achieved upon completion of the Root Cause Evaluation on the Corrective Action Process in April, 1995.