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50-287 Oconee Nuclear Station, Unit 3, Duke Power Co.

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AUTH. NAME AUTHOR AFFILIATION
HAMPTON, J.W. Duke Power Co.
RECIP. NAME RECIPIENT AFFILIATION
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SUBJECT: Responds to NRC 961204 ltr re violations noted in insp repts
50-269/96-16, 50-270/96-16 & 50-287/96-16. Corrective actions:
revised procedure IP/0/B/0202/001F re calibr of Letdown
Storage Tank Level.

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Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

(864)885-3000



DUKE POWER

January 2, 1997

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Oconee Nuclear Site
Docket Nos. 50-269, -270, -287
Inspection Report 50-269, -270, -287/96-16
Reply to Notices of Violation

Gentlemen:

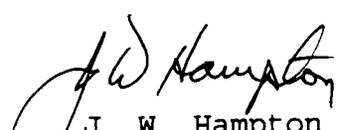
By letter dated December 4, 1996, the NRC issued two Notices of Violation as described in Inspection Report No. 50-269/96-16, 50-270/96-16, and 50-287/96-16.

Violation A identifies a situation in which a testing procedure did not provide adequate information for calibrating the Letdown Storage Tank Level Instrumentation. Violation B involves the failure to identify in the corrective action program that drawings did not match as-built conditions.

Duke Power acknowledges these violations. Accordingly, Duke is proposing several corrective actions, as described in the attachments, to address the root causes of these violations.

Pursuant to the provisions of 10 CFR 2.201, Attachment 1 provides a written response to Violation A identified in the subject Inspection Report. Likewise, Attachment 2 provides a written response to Violation B.

Very truly yours,


J. W. Hampton

Attachments

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NRC Document Control Desk
January 2, 1997
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cc: Mr. S. D. Ebnetter, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II

Mr. D. E. LaBarge, Project Manager
Office of Nuclear Reactor Regulation

Mr. M. A. Scott
Senior Resident Inspector
Oconee Nuclear Site

Attachment 1
Reply to Notice of Violation (Reply)
Violation 50-269, 270, 287/96-16-02

Restatement of Violation

Technical Specification 6.4.1.e requires that written procedures with appropriate check off lists and instructions shall be provided for preventative or corrective maintenance which could affect nuclear safety or radiation exposure to personnel.

Contrary to the above, on August 7, 1996, it was identified that Oconee Level Calibration Procedure, IP/O/B/0202/001F, Letdown Storage Tank Level vs. Pressure Curve Limits, did not provide adequate instructions for calibrating the Letdown Storage Tank Level Instrumentation. The condition resulted in the incorrect calibration of Letdown Storage Level instruments on all three units.

Reply to Notice of Violation 96-16-02

1. The reason for the violation:

Duke Power Company acknowledges this violation because technical errors were found in procedure IP/O/B/0202/001F, High Pressure Injection System (HPI) Letdown Storage Tank (LDST) Level Instrument Calibration. Research of the procedure history concludes the error occurred in the original procedure created in 1971.

As part of an internal effort to upgrade loop accuracy calculations to present day standards, OSC-4506, Letdown Storage Tank Level Instrument Loop Accuracy Calculation for Units 1, 2 and 3, was being revised. On August 6, 1996, during a review of potential process measurement effects for this instrumentation in an upgraded version of calculation OSC-4506, it was discovered that an error existed in procedure IP/O/B/0202/001F. The specific gravity correction was incorrectly applied in the procedure which resulted in the demineralized water in the transmitter reference

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leg weighing more than the boric acid in the LDST at the same pressure and approximately the same temperature.

During normal operation, the boron concentration in the LDST decreases from approximately 1250 ppm to 0 ppm during the fuel cycle. Therefore, under normal operating conditions, the weight of the demineralized water will always be less than or equal to the weight of the boron solution in the LDST. Since the boron concentration level varies in the LDST, correcting for a specific gravity in the calibration procedure will induce an error during normal operation. The magnitude of the error is dependent on the actual boron concentration in the LDST versus the boron concentration used to determine the specific gravity correction factor. This oversight was a technical error by the preparer and reviewer of the original procedure.

Inspection Report 96-16 states, "The procedure was in error because a specific gravity correction factor had been misapplied in calculation OSC-4506." As a clarification, the specific gravity correction factor was misapplied in the procedure originated in 1971, not in the calculation.

2. The corrective steps that have been taken and the results achieved:

It would not be practical to include specific gravity corrections in the procedure since the boron concentration decreases from the beginning of cycle to the end of cycle. Therefore, change 27 to IP/O/B/0202/001F was processed to delete the specific gravity correction from the procedure. LDST level loop accuracy calculation OSC-4506 accounts for the worst case specific gravity correction. The total loop uncertainty (TLU) is calculated using the worst case specific gravity correction. Therefore, the TLU will always be conservative with respect to the specific gravity correction. Since the worst case TLU is used to determine LDST operating curve limits, there is no potential for exceeding curve limits because of changes in specific gravity. The calibration procedure was also enhanced to require use of more accurate test equipment during calibrations and to reduce the tolerance of the

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instrument string, which yields a more accurate LDST level reading. Both trains of LDST level instrumentation on Units 1, 2, and 3 were recalibrated.

An engineering analysis concluded that the procedure error did not affect operability of the HPI System. Because the LDST level instruments have been recalibrated and the calibration procedure for these instruments has been corrected, the concern raised from the LDST level instruments being incorrectly calibrated is eliminated.

A statement in the GENERAL DESCRIPTION section of IP/0/B/0202/001F was added per change 27 that states "Specific gravity corrections are accounted for in OSC-4506." This statement will eliminate any future changes to the procedure to account for specific gravity corrections without first referring to the calculation for verification of impact. The methodology for calculating TLU requires consideration of worst-case specific gravity corrections in calculation OSC-4506.

3. The corrective steps that will be taken to avoid further violations:

No additional corrective actions are necessary.

4. The date when full compliance will be achieved:

As of August 8, 1996, both trains of LDST level instrumentation on Unit 1, 2, and 3 had been recalibrated per change 27 to IP/0/B/0202/001F. No further actions are required to reach full compliance.

Attachment 2
Reply to Notice of Violation (Reply)
Violation 50-269, 270, 287/96-16-01

Restatement of Violation

10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, and the licensee's Quality Assurance programs (Duke-1-A, Section 17.3.2.13) require that measures be established to assure that conditions adverse to quality are promptly identified and corrected.

Duke Power Nuclear System Directive 208, Problem Investigation Process (PIP), defines the process by which 10 CFR 50, Appendix B, Criterion XVI requirements are implemented at the nuclear stations. Section 208.6 requires that upon identification of a problem, an employee will initiate a PIP. Appendix M of the directive provides a list of examples, one of which is "Drawings do not match as-built conditions."

Contrary to the above, measures to assure that conditions adverse to quality are promptly identified and corrected were not implemented in that:

1. On September 12, 1996, Maintenance personnel identified that Unit 1 station drawing O-504A did not match as-built conditions, but did not initiate a PIP.
2. On September 9, 1996, Maintenance personnel identified that Unit 2 station drawing O-2504B did not match as-built conditions, but did not initiate a PIP.

Reply to Notice of Violation 96-16-01

1. The reason for the violation:

Duke Power Company acknowledges this violation with the exception that the drawing listed in item two should be O-504A. The referenced drawing is for Unit 3.

Attachment 2
Reply to Notice of Violation (Reply)
Violation 50-269, 270, 287/96-16-01

Duke Power agrees that a PIP should have been written to document that drawing 0-504A did not match the as-built conditions for the Auxiliary Building Ventilation System (ABVS) vents which supply the Unit 1 and 2 battery control rooms.

A detailed root cause analysis for this event is in progress, but has not yet been completed. The apparent cause of the failure by Maintenance to initiate PIPs to identify the drawing discrepancies is an inadequate understanding of the PIP process.

Maintenance technicians identified the problem during a routine service call to adjust the temperature in the Unit 2 control battery room. While troubleshooting the problem, it was noted that the air entering the room through the ABVS supply vents was warmer than 80 degrees. Although the louvers on these vents were closed, enough air was leaking into the Unit 2 control battery room to prevent the small air conditioner from adequately cooling the battery room. A review of the Unit 2 drawing, 0-504A, showed the supply vents blanked and sealed. A work request was written to install and seal metal blanks in the Unit 2 ABVS supply vents. A further review was performed on the Unit 1 drawing 0-504A. As a result, a work request was written and the Unit 1 ABVS supply vents were also blanked and sealed.

Since the temperature problem appeared to be generic to all the units, the Maintenance team also reviewed the Unit 3 drawing 0-2504B and wrote a work order to blank and seal the ABVS vents in Unit 3. This work order was later cancelled by Engineering because isolating the supply air to the battery rooms reduced the pressure in the rooms. It was determined that the reduced battery room pressure was no longer positive with respect to the penetration rooms when the Penetration Room Ventilation System was in operation. Minor modification ONOE-9540 removed the installed blanks from the Units 1 & 2 ABVS supply vents in the control battery rooms. The modification also revised the Units 1 & 2 drawings to the correct as-built configuration.

Attachment 2
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The Maintenance team consulted the correct controlled drawings and performed and documented their work according to Station procedures. However, the Maintenance team did not document the as-built drawing discrepancy in a PIP as required by NSD 208, Appendix M.

2. The corrective steps that have been taken and the results achieved:

The Maintenance Superintendent issued a written communication to all maintenance personnel specifying that all drawing discrepancies should be identified using the PIP process. The Maintenance team initiated a PIP to identify the discrepancy between drawing O-2504B and the as-built condition in Unit 3. PIPs were also written to generally address this event and to document the corrective actions necessary to prevent recurrence of this type of event. An investigation was initiated to determine the root cause for this event.

3. The corrective steps that will be taken to avoid further violations:

- a) Review NSD 208, Appendix M to determine if further clarification is needed regarding examples of PIPs. Revise NSD 208 as necessary.
- b) Correct the drawing discrepancy identified on Unit 3 drawing O-2504B.
- c) Complete the detailed root cause analysis for this event by January 15, 1997, and identify additional corrective actions, as necessary.

4. The date when full compliance will be achieved:

Oconee Nuclear Station is currently in full compliance.