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SUBJECT: Revised response to violations noted in Insp Rept
 50-261/88-28.Corrective actions:watches calibr.

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
NRC INSPECTION REPORT NO. 50-261/88-28 REVISED RESPONSE

Gentlemen:

On December 9, 1988, Carolina Power and Light Company (CP&L) provided a response to the Notice of Violation initiated by NRC Inspection Report No. 50-261/88-28. Within that response, CP&L committed to further review Severity Level IV Violation, RII-88-28-09, under the Plant Corrective Action Program. This review has been completed, and the results are provided as a revised response to the subject violation. The revised information is designated by right-hand margin bar.

Severity Level IV Violation (RII-88-28-02-SL4)

10 CFR 50, Appendix B, Criterion XII requires that measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

Plant Technical Specification 4.0.1 requires that in-service inspection and testing of ASME Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code.

Contrary to the above, the licensee did not have a program to control or calibrate stop watches which were utilized for stroke timing of safety-related valves or for the timing of other equipment of safety significance.

Reply

(1) Admission or denial of the violation

CP&L acknowledges the violation.

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(2) The reason for the violation

Stopwatches, historically, have been considered as measuring devices which require no special calibration measures. It has been presumed that normal commercial practices provide adequate accuracy for stopwatches, similar to that provided for rulers, tape measures, and levels. The stopwatch utilized for stroke timing of safety-related valves and for timing of other equipment of safety significance has been controlled by Plant Operations personnel and stored in the Unit 2 Control Room. This control and the accuracy of the stopwatch as purchased was believed to have assured adequate performance of the timepiece.

(3) The corrective steps which have been taken and the results achieved

The stopwatch maintained by Plant Operations personnel for utilization in the stroke timing of safety-related valves and the timing of other equipment of safety significance has been sent offsite to the Shearon Harris Nuclear Power Plant Maintenance Calibration Laboratory for a calibration check in accordance with their procedure for the calibration of stopwatches using a Multi-amp reference standard digital timer, MTE-038. The stopwatch has been found to be accurate within +/- .05 seconds, a stricter tolerance than required for measurements of time pursuant to Section XI of the ASME Code.

(4) The corrective steps which will be taken to avoid further violations

Plant Operations procedure OMM-017, for the calibration, control, and repair of portable test equipment, will be revised to also include stopwatches utilized for the stroke timing of safety-related valves and for the timing of other equipment of safety significance. Stopwatches will be calibrated on at least an annual basis.

Instructions will be added to Plant surveillance test procedures which require use of a stopwatch for the stroke timing of safety-related valves and the timing of other equipment of safety significance to assure utilization of a calibrated stopwatch.

(5) The date when full compliance will be achieved

March 31, 1989.

Severity Level IV Violation (RII-88-28-09-SL4)

10 CFR 50, Appendix B, Criterion XVI, requires the licensee to establish measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, the licensee failed to establish measures to promptly identify and correct conditions adverse to quality in that, malfunctions (identified between 1985 and January 1988, and again subsequent to January 1988) in the Environmental and Radiation Control Building sump pump controllers and the sump high level alarm system were not promptly corrected. Failure of the controller and the alarm to function properly resulted in the overflow of the sump and the introduction of radioactive liquid into the site storm drain system in August 1988.

Reply

(1) Admission or denial of the violation

CP&L acknowledges the violation.

(2) The reason for the violation

To better address the reasons for the violation, contributing factors are identified within the following two areas:

(a) Malfunction of Sump Controls

The overflow of water from the Environmental and Radiation Control (E&RC) Building sump into the E&RC Building laboratory floor drains resulted from the malfunction of the sump pump control system. Several causal factors have been identified which rendered the control system "inoperable." These include improper wiring of the high and low level control probes. The wiring of these probes was reversed, such that a sump high level would not activate the sump pump. Also, inspection of these probes revealed significant degradation and corrosion. The tip of each probe was found to be "insulated" by what appeared to be corrosion products. Also, the probe tip was found to be pitted.

The identification of these causal factors revealed certain programmatic concerns which contributed to the violation. The acceptance testing of the sump installation did not require proper and extensive testing of the level control system. Also, proper responsibility for the operation of the sump was not established such that the level of attention given to control malfunctions was less than adequate. The problems with the sump pump control system were recognized as requiring resolution, however, a low priority was assigned to these problems since the condition could be addressed by manual operation of the sump pump to prevent an overflow.

(b) Concrete Void

The introduction of radioactive liquid into the site storm drain system resulted from the sump overflow escaping the E&RC Building by way of a void in the concrete around one of the laboratory floor drains. Investigation into the event revealed that this void in the concrete had allowed a small amount of radioactive liquid to be released to the ground directly under the E&RC Building floor drain. The liquid runoff was then collected in a "french" drain and discharged into the storm drain system. The radioactivity in the storm drain was measured as $7E-6$ $\mu\text{Ci/cc}$, with no radionuclides detected at the site release point.

The cause of these concrete voids has been identified as improper work practice. However, a contributing factor was the failure to identify the laboratory floor as a barrier to potential radioactive liquid release during the planning and construction for the E&RC Building. As such, the construction of the floor drain system and surrounding concrete were not held to the proper level of quality.

(3) The corrective steps which have been taken and the results achieved

(a) Malfunction of Sump Controls

The wiring of the high and low level control probes has been corrected. Also, the probes have been cleaned to ensure that the probe tips will function properly. New probes have been purchased; installation of these new probes will be considered if corrosion product buildup continues to be a problem. The sump level control system is now operating properly.

(b) Concrete Void

The concrete void around the laboratory floor drain has been filled with cement grout. To ensure that further leakage will not occur, the laboratory waste drainage system has been successfully tested with potable water.

(4) The corrective steps which will be taken to avoid further violations

(a) Malfunction of Sump Controls

The improper wiring of the sump level control probes was determined to be the result of a lack of proper tagging; none of the probes had a tag, nor were they assigned an instrument number by the plant modification package. To address this concern, the plant's configuration control program will be reviewed to consider requirements for all instruments and components to be given a number and be tagged for proper identification. Also, the Radwaste System Engineer will track the problem of corrosive buildup on the level control probes and take appropriate action if this problem continues.

To address the identified programmatic concerns, several actions will be taken. To help ensure that acceptable modification acceptance testing is performed, plant Liaison Engineers and System Engineers will review the results of the Plant Corrective Action Program review of this incident (identified as Significant Condition Report No. 88-017). This will emphasize the importance of thorough post-installation testing. Also, actions will be taken to increase the sensitivity of personnel to the E&RC Building Sump, such that problems are promptly identified and dispositioned.

(b) Concrete Void

The E&RC Building laboratory floor was not identified as a barrier to potential radioactive liquid release during the planning and construction of the building. To help preclude the occurrence of future similar events, SCR No. 88-017 will be reviewed by Plant Liaison Engineers and System Engineers. Review of this report will emphasize the importance of performing a thorough review of proposed changes to plant structures and systems.

(5) Date when full compliance will be achieved

All of the corrective actions detailed above, including the identified programmatic improvements, will be fully implemented by November 3, 1989.

Should you have any questions concerning this submittal, please contact Mr. J. M. Curley, telephone (803) 383-1367.

Very truly yours,



R. E. Morgan
General Manager

H. B. Robinson S. E. Plant

CTB:jch

cc: Mr. S. D. Ebnetter
Mr. L. W. Garner
INPO