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SUBJECT: Responds to NRC 970206 ltr re violations noted in insp rept
 50-261/98-03. Corrective actions: procedural guidance was
 implemented in early 1996 to provide guidance for new
 instrument tubing installation & repair.

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Carolina Power & Light Company

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

Robinson File No: 13510E

Serial: RNP-RA/98-0039

MAR 06 1998

United States Nuclear Regulatory Commission
Attn: Document Control Desk
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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. 50-261/98-03
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

The attachment to this letter provides the Carolina Power & Light (CP&L) Company reply to the violations identified in NRC Inspection Report No. 50-261/98-03 dated February 6, 1997, for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

Should you have any questions regarding this matter, please contact Mr. H. K. Chernoff.

Very truly yours,

A handwritten signature in dark ink, appearing to read "John S. Keenan".

J. S. Keenan
Vice President

RTW/rw
Attachment

c: USNRC Senior Resident Inspector, HBRSEP
Mr. L. A. Reyes, Regional Administrator, USNRC, Region II
Mr. J. W. Shea, USNRC Project Manager, HBRSEP

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Q PDR



REPLY TO A NOTICE OF VIOLATION

Violation 50-261/98-03-02

10 CFR 50, Appendix B, Criterion XVI requires that measures shall be established 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, as of April 7, 1997, the licensee failed to correct conditions adverse to quality associated with instrument sensing line slope deficiencies documented in CP&L letters to NRC dated September 14, 1994, and February 21, 1996, Subject: Reply to a Notice of Violation for NRC Inspection Report numbers 50-261/94-17 and 95-30.

This is a Severity Level IV violation (Supplement I)

Reply

CP&L agrees that the violation occurred as described.

1. The Reason for the Violation

Some corrective actions identified in the September 14, 1994 violation were not implemented as committed. That violation response committed to review other transmitters to identify sensing lines that were improperly sloped and to initiate appropriate corrective actions. Review of the implementation of that commitment revealed that the scope of the review was limited to flow transmitters. Work requests were written to inspect for and/or correct slope deficiencies for the identified flow transmitters. Commitment closure was based on initiation of these work requests. Most of the work requests were later canceled because operational problems had not been experienced with the identified instruments.

By letter to the NRC dated February 21, 1996, HBRSEP, Unit No. 2 responded to a similar violation concerning repetitive problems involving a level transmitter. The response to this violation contained a commitment to review other transmitter configurations that could exhibit erroneous indication due to air entrapment with the emphasis on level transmitters since previous corrective actions had focused on flow transmitters.

Several issues were identified that contributed to violation 50-261/98-03-02. The corrective action program previously allowed closure of action items without verification that implementation of committed actions were in place. Closure was sometimes based on initiation of action in other administrative processes, such as generation of a work request. In addition, initiated actions did not always reference the commitment thereby allowing either cancellation or modification of the described action without adequate administrative controls.

2. The Corrective Steps That Have Been Taken and the Results Achieved

The corrective action program was revised in 1994 to require verification of implementation prior to closure of action items.

Procedural guidance was implemented in early 1996 to provide guidance for new instrument tubing installation and repair. This guidance is applicable to new instrument installation and the repair of existing instruments. Existing instrument tubing installation sloping is not required to conform to this guidance, however it may be used when evaluating instrument performance problems.

The administrative controls procedure for writing and processing work requests was revised May 16, 1997, to strengthen controls for committed actions. The procedure now directs that committed actions to external agencies be noted on the description of the work item.

One of the six instruments identified as not having adequate tubing slope (FI-944) was rerouted on May 7, 1997.

3. The Corrective Steps That Will Be Taken to Avoid Further Violations

The remaining 5 instruments identified by the NRC inspection team as having inadequate instrument tubing slope will be modified during RO 18.

Safety related differential instrument transmitters on fluid systems will be walked down to determine conformance with the procedure guidance for new installation and repair of instrument tubing during refuel outage (RO) 18. As previously stated, instruments installed prior to the 1996 implementation of the procedure guidance for new installation and repair of instrument tubing are not required to conform to this guidance. Instruments identified not in conformance with the new guidance will be evaluated to determine if corrective action is warranted based on performance history. The findings of the walk down, evaluation results, intended corrective actions, and a schedule for completion of intended corrective actions, will be reported to the NRC by July 30, 1998.

In addition, lessons learned from this violation will be reviewed with Engineering and Regulatory Affairs personnel. The focus of the lessons learned will be to promulgate management expectations for review of commitment closure. This action will be completed by May 30, 1998.

4. The Date When Full Compliance Will Be Achieved

Full compliance will be achieved by completion of the actions described above during RO 18.

Violation 50-261/98-03-03

10 CFR 50.46(a)(3)(ii) requires each significant change to or error discovered in an acceptable evaluation model, or in the application of such a model that affects the peak cladding temperature calculation, be reported to the NRC within 30 days. Significant change or error is defined in 10 CFR 50.46(a)(3)(I) as one that results in a peak cladding temperature different by more than 50 °F from the temperature calculated for the limiting transient using the last acceptable model.

Contrary to the above, the licensee failed to report a significant change in peak cladding temperature from 2006 °F to 2064 °F, as calculated on April 24, 1996, to the Commission between May 24, 1996, and October 14, 1996.

This is a Severity Level IV violation (Supplement I).

Reply

Carolina Power & Light (CP&L) Company agrees that a violation of the reporting requirements of 10 CFR 50.46(a)(3)(ii) occurred, however, it should be noted that the example cited appears to be in error.

The significant change in peak cladding temperature (PCT) referenced in the violation was reported to the NRC by letter dated April 24, 1996.

However, as a result of changes in the PCT evaluation models (EM) in October 1991, two additional PCT values were created. CP&L believes the violation is the failure to report significant changes in these additional PCT values in accordance with 10 CFR 50.46(a)(3)(ii) until October 16, 1997.

1. The Reason for the Violation

Reporting requirements promulgated by a revision to 10 CFR 50.46 on October 17, 1988, were not appropriately implemented. When the peak clad temperature (PCT) evaluation models (EM) were revised in October 1991, creating two additional PCT EMs, personnel failed to recognize the requirement to report these additional PCT values. A brief discussion associated with the history of PCT determinations is provided in the following paragraphs.

In October 1991, the PCT analysis was revised to require PCT calculations for two separate phases of the Large Break (LB) and Small Break (SB) LOCA. This change in analysis was the result of a modification to the SI system and the recognition that an EM should be applied to the calculation of PCT during the transition of ECCS operation from the injection phase to the recirculation or long term cooling phase. The injection phase is the period from initial ECCS actuation where water from the Refueling Water Storage Tank (RWST) is injected into the core via the Safety Injection (SI) and Residual Heat Removal (RHR) pumps, until the RHR pumps are stopped to allow suction to be shifted to the containment vessel sump. The transition

recirculation phase begins when the RHR pumps are stopped, and continues through long term cooling with RHR pump(s) running with suction aligned to the containment vessel sump. A separate calculation is required to determine the PCT for each phase of the LOCA (injection and transition recirculation) and for each type of LOCA (LB and SB). This results in 4 PCT determinations: LB LOCA injection phase, LB LOCA recirculation phase, SB LOCA injection phase, and SB LOCA recirculation phase. As a result of cognitive error, personnel failed to recognize the need to report each of the above PCT values. Only significant injection phase PCT changes were reported to the NRC in accordance with 10 CFR 50.46(a)(3)(ii) until October 16, 1997.

2. The Corrective Steps That Have Been Taken and the Results Achieved

By letter dated October 16, 1997, CP&L reported the recirculation phase PCTs for the LB and SB LOCAs. This letter also included a chronology of PCT changes associated with LB and SB LOCAs (injection and transition recirculation) since October 4, 1991, as well as the current limiting PCTs.

The Nuclear Fuel Management & Safety analysis organization has revised its calculation review guidelines to ensure site Engineering and site Licensing/Regulatory Programs are notified of changes in PCT calculations. This action was completed on September 30, 1997.

3. The Corrective Steps That Will Be Taken to Avoid Further Violations

The Nuclear Fuel Management & Safety analysis organization will implement procedural controls to ensure site Engineering and Licensing/Regulatory Programs are notified of changes in PCT calculations by August 30, 1998.

4. The Date When Full Compliance Will Be Achieved

Compliance with the requirements of 10 CFR 50.46 was achieved by letter to the NRC dated October 16, 1997, which reported the current PCT values.

Violation 50-261/98-03-05

10 CFR 50.59, "Changes, Tests, and Experiments" provides in part, that the licensee may make changes in the facility or procedures as described in the safety analysis report (SAR) without prior Commission approval, unless the proposed changes involves an unreviewed safety question. The licensee shall maintain records of the changes to the extent that the changes constitute a change as described in the SAR. These records must include a written safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, as of April 7, 1997, the licensee failed to perform a safety evaluation which provided the basis for the determination that a change to the facility did not involve an unreviewed safety system. Specifically, the 50.59 Safety Evaluation Screen performed on March 7, 1996, to address replacement of motor pinions and worm shaft clutch gears for Valves RHR-744 A & B, under Engineering Service Request 9600012, was inadequate. The activity resulted in increasing the motor operator valve stroke times beyond the ten seconds specified in UFSAR Section 6.3.2.2.12 and thus resulted in a change to the facility described in the UFSAR and no safety evaluation was performed. The modifications to the valves which increased the stroke times beyond ten seconds were implemented in 1996.

This is a Severity Level IV violation (Supplement I).

Reply

CP&L agrees that the violation occurred as described.

1. The Reason for the Violation

A change was initiated to replace the motor pinion and worm shaft on several valves. The purpose of the gear changes was to increase output thrust capability of the valve actuators to increase valve operating margins. For valves RHR-744A & B, the modification resulted in a calculated stroke time increase from approximately 9 seconds to 15 seconds. The evaluation of this change discussed the impact on the electrical design (i.e., no impact on motor protection or operation) but did not discuss other potential impacts. The evaluator had reviewed Chapter 6, "Emergency Core Cooling System," the UFSAR section that discussed the 10 second stroke time criteria for valves which received an SI signal, but did not recognize the applicability to valves RHR-744 A & B which he believed were covered under Section 5.4.4, "Residual Heat Removal System."

To support this change a 10 CFR 50.59 safety evaluation screening was performed. The personnel that performed the safety evaluation screening relied primarily on a computer search tool to identify affected portions of the UFSAR. The UFSAR wording associated with these particular valve stroke times is "*For those valves which must function on the SI signal, 10 sec operators are provided.*" The UFSAR review conducted by the personnel performing the safety

evaluation screening did not identify this UFSAR statement. This inadequate review of UFSAR requirements resulted from personnel error.

2. The Corrective Steps That Have Been Taken and the Results Achieved

A 10 CFR 50.59 evaluation was performed to revise the UFSAR to allow the increased stroke time for the valves. This safety evaluation was completed on March 26, 1997, and a change to UFSAR Section 6.3.2.2.12 was submitted on March 27, 1997. These action were completed prior to the NRC design inspection.

The individuals involved with the modification preparation and the associated 10 CFR 50.59 safety evaluation screening were counseled on the need to conduct thorough reviews of potentially affected sections of the UFSAR and to verify assumptions used in judging impacts. This action was completed on March 6, 1998.

3. The Corrective Steps That Will Be Taken to Avoid Further Violations

A memorandum will be distributed to Qualified Safety Reviewers (QSRs) discussing the violation and the need to exercise caution in relying on electronic searches to identify changes to the UFSAR when performing 50.59 safety evaluations and screenings. This action will be completed by March 31, 1998.

Training will be provided to Robinson engineering personnel on this event and the need to exercise caution in relying on electronic searches to identify changes to the UFSAR when performing 50.59 Safety Evaluations. This training will be completed by June 18, 1998.

Training will be provided to QSRs on this event and the need to exercise caution in relying on electronic searches to identify changes to the UFSAR when performing 50.59 Safety Evaluations by July 30, 1998.

4. The Date When Full Compliance Will Be Achieved

Full compliance was achieved on March 26, 1997 with the completion of the 10 CFR 50.59 safety evaluation.

Violation 50-261/98-03-06

10 CFR 50.9 (a) requires, in part, that information required by statute or by the Commission's regulations, order, or license condition to be maintained by the licensee shall be complete and accurate in all material respects.

UFSAR Section 8.3.1.3 states that control cables are separated into two basic channels as required for redundant circuits. Cables assigned to these channels for separation are required to be in their respective channels from the beginning of the cable to the final termination.

Contrary to the above, as of May 25, 1997, safety injection pump C autostart cable C2239C and manual cable C2239D were in the same channel (cable tray) as the SI pump A autostart cable C2237D and the SI pump B (train A line up) autostart cable C2891C. The information the licensee provided to NRC in the UFSAR was not accurate.

This is a Severity Level IV violation (Supplement I).

Reply

CP&L does not agree that a violation of 10 CFR 50.9 requirements occurred as a result of the issue identified in this violation.

The example cited in the violation occurred during site construction and remained undetected until May of 1997, when it was reported in accordance with the requirements of 10 CFR 50.72 and 10 CFR 50.73 (NRC in Licensee Event Report 97-06-00 dated June 20, 1997) as allowed by 10 CFR 50.9(b). CP&L believes this to be a violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, in that the actions taken to correct the identified cable separation issue in 1969 were ineffective in correcting the condition. The reason for the original plant design installation error and the related corrective actions are provided in the following sections.

1. The Reason for the Violation

The cited example refers to two separate cables. The reason for each of these cables being routed in the same cable tray is discussed individually below.

The design basis for HBRSEP, Unit 2 is based on functional redundancy and not electrical train separation. For Safety Injection (SI), two redundant trains are available. SI pump 'A' is in the 'A' train, SI Pump 'C' is in the 'B' train, and SI Pump 'B' is a swing pump that can be aligned for operation in either the 'A' or 'B' train in the event SI Pump 'A' or SI Pump 'C' is unavailable. Since manual start of SI Pump 'C' is not functionally redundant to the auto start of SI Pump 'A' or SI Pump 'B' (when aligned for 'A' train ECCS operation), routing of C2239C (SI Pump 'C' manual start cable) in the same cable tray as the auto start cables for the 'A' train SI pump is not considered a deviation.

The auto start function of SI Pump 'C' is functionally redundant to the auto start function of the 'A' train SI pump. The routing of cable C2239D (SI Pump 'C' auto start cable) in a cable tray with auto start cables for an 'A' train SI pump was not in conformance the HBRSEP Unit No. 2 design bases. This condition was caused by an original plant design installation error. During plant construction, the routing of cable C2239D was field verified on November 28, 1969. A cable separation review performed by engineering personnel determined that the cable had been pulled in an incorrect route. Closure documentation for that review indicates that the cable was "re-pulled per design," however, on May 21, 1997, the cable was found to be in the same route as the field verification of November 28, 1969. Therefore it appears that the cable was either not re-pulled, or was re-pulled into the same route.

2. The Corrective Steps That Have Been Taken and the Results Achieved

As a result of the identified train separation issue, SI Pump 'C' was declared inoperable, and SI Pump 'B' was placed in service on May 20, 1997.

On May 25, 1997, a modification was installed that placed cable C2239D in new routes that achieved normal design basis functional separation. In addition cable C2239C was placed in a new route on May 25, 1997, to provide a higher level of cable separation.

A review of other SI pump cable installations was performed and two additional deviations to the redundant cable separation criteria were identified. This review concluded that these cables had been abandoned in place during previous modifications.

3. The Corrective Steps That Will Be Taken to Avoid Further Violations

Current electrical installation practices provide conservative separation criteria that is based on the concepts of safety train separation. Administrative controls for performing specific system self assessments will be revised to place additional emphasis on electrical separation. This action will be completed by May 30, 1998.

4. The Date When Full Compliance Will Be Achieved

Full compliance with the requirements of 10 CFR 50, Appendix B, Criterion XVI was achieved when the modification to correct the SI pump cable separation condition was implemented on May 25, 1997.