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SUBJECT: Responds to NRC 950612 ltr re violations noted in insp rept 50-261/95-14.Util denies violation.Corrective actions: supervisor performing thimble plug shuffles relieved from duties & qualifications suspended.

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CP&L

10 CFR 2.201

Carolina Power & Light Company
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550
Robinson File No.: 13510E
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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. 50-261/95-14
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

This letter provides the Carolina Power & Light (CP&L) Company reply to Violations A and B of the Notice of Violation identified in NRC Inspection Report 50-261/95-14, that was transmitted by letter dated June 12, 1995. The two violations involve a failure to provide adequate measures to ensure the quality of purchased services and an inadequate Operations Surveillance Test procedure. This reply is required to be submitted to the NRC by July 12, 1995.

Should you have any questions regarding this matter, please contact Mr. R. M. Krich at (803) 857-1802.

Very truly yours,

Dale E Young for CSH

C. S. Hinnant
Vice President

DTG:klb
Enclosure
c: Mr. S. D. Ebneter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
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IE01

REPLY TO A NOTICE OF VIOLATION

Violation A

10 CFR 50 Appendix B, Criterion VII, Control of Purchased Material, Equipment, and Services, requires in part, that measures be established to ensure the quality of purchased services. Implicit in this requirement are the requisites that contracted service personnel who perform activities affecting quality, be indoctrinated and trained as necessary to assure that they achieve and maintain a suitable proficiency, and that they accomplish activities affecting quality in accordance with instructions, procedures or drawings of a type appropriate to the circumstances.

Contrary to the above, the measures established by the licensee to ensure the quality of purchased services were inadequate in that:

1. On May 8, 1995, a contracted refueling technician failed to follow procedure FHP-001, Fuel Handling Tools Operating Procedure, regarding the orientation of a thimble plug tool he was using. Ultimately, this resulted in his failure to successfully perform nineteen steps of procedure FMP-019, Fuel And Insert Shuffle.

2. On May 3, 1995, a contracted refueling technician did not verify polar crane/refueling manipulator crane clearance after he relocated the latter; the contracted polar crane operator had not been trained on Maintenance Instruction MI-510, Polar Crane General Instructions; the contracted polar crane operator had not received a cogent proficiency verification on the polar crane's operation; and the polar crane operator did not verify the position of the refueling manipulator crane before moving the polar crane. Ultimately, this resulted in the polar crane colliding with the refueling manipulator crane, causing significant structural damage to the latter.

3. On May 4, 1995, the contracted polar crane operator moved the polar crane on his own initiative, with no communication or direction from the signalman, from a position in which he could not see the auxiliary hook. This resulted in the auxiliary hook striking the concrete cubicle surrounding the top of the "C" steam generator.

Reply

Carolina Power & Light (CP&L) Company denies the violation.

1. The Basis for Disputing the Violation

This violation cites 10 CFR 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services" as the regulatory requirement that was not met. This violation specifies three examples of where the measures established to ensure the quality of purchased services were inadequate. These examples occurred during the performance of work related to the conduct of the plant's Refueling Outage 16. As explained below, we consider that CP&L has a program to ensure the quality of purchased services, and our program complies with the applicable requirements of 10 CFR 50, Appendix B, Criterion VII by conforming to pertinent NRC guidance that we have committed to implementing.

10 CFR 50, Appendix B, Criterion VII, requires that "Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contracts and subcontractors, conform to the procurement documents." Criterion VII also requires that "The effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with the importance, complexity, and quality of the product or services."

The NRC provides explicit guidance in Regulatory Guides (RGs) and in the industry Standards that these RGs endorse that explain the intent of regulations and describe acceptable methods licensees can implement to comply with the associated regulation. With respect to the requirements of 10 CFR 50, Appendix B, Criterion VII, we are committed to following the applicable guidance provided in RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, February 1978. This RG endorses, with certain modifications, the guidance in Section 5.2.13, "Procurement and Materials," of the American National Standards Institute (ANSI) Standard N18.7 - 1976, "Administrative Controls and Quality Assurance Requirements for the Operational Phase of Nuclear Power Plants."

The H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, NRC approved Quality Assurance (QA) Program is described in Section 17.2.2.1, "Operations and Maintenance Quality Assurance Program," of the Updated Final Safety Analysis Report (UFSAR). Section 17.2.2.1 states that the QA Program ". . . is designated to ensure compliance with the NRC Regulatory Guides and American National Standards Institute (ANSI) Standards applicable to the operations phase. The commitment to comply or alternatives for CP&L to follow are presented in section 1.8 of the FSAR." UFSAR Section 17.2.7, "Control of Purchased Material, Equipment, and Services," addresses 10 CFR 50, Appendix B, Criterion VII, by describing the measures that are taken to assure that purchased services conform to the procurement documents and that the effectiveness of the control of quality by contractors is assured in accordance with the guidance in ANSI Standard N18.7 - 1976, Section 5.2.13.

RG 1.33 references RG 1.123, "Quality Assurance Requirements for Control of Procurement of Items and services for Nuclear Power Plants," Revision 1, July 1977. Both RG 1.123 and ANSI Standard N18.7 - 1976 endorse the guidance in ANSI Standard N45.2.13 - 1976, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants." As stated in UFSAR Section 1.8, we are not committed to RG 1.123, but are committed to the applicable guidance contained in the Draft 2, Revision 4, April 1974 version of ANSI Standard N45.2.13.

ANSI N45.2.13 - 1974 (Draft 2, Revision 4, April 1974), Appendix A, Section 6, "Methods of Specifying Quality Assurance Program Requirements," states in part that, "There are various ways in which the Purchaser can specify and obtain suitable Supplier quality assurance program requirements." Method (a.) states, "The Purchaser may incorporate into the procurement documents a complete quality assurance program standard, such as ANSI N45.2, and shall require the Supplier to apply the requirements of the quality assurance standard as appropriate to the items or services being procured. The Supplier's quality assurance program shall be evaluated by the Purchaser to assure that it is appropriate to the items or services being purchased." Furthermore, ANSI Standard N45.2.13 - 1974 (Draft 2, Revision 4, April 1974), Appendix A, Section 2.b, "The Complexity or Uniqueness of the Item," states, "The complexity or uniqueness of the item may also affect the extent of personnel training and indoctrination required."

Lastly, ANSI Standard N45.2.13 - 1974 (Draft 2, Revision 4, April 1974), Section 9, "Corrective Action," states that, "The Purchaser and Supplier shall establish and document measures to assure that conditions adverse to quality such as deficiencies, deviations, defective items and nonconformances are promptly identified and corrected."

The CP&L procurement program satisfies our commitment to ANSI Standard N45.2.13 - 1974 (Draft 2, Revision 4, April 1974) by requiring that the contract services providers adhere to the CP&L QA Program. In so doing, the contract services provided must follow the training specified by CP&L and adhere to the CP&L Corrective Action Program.

The CP&L and ABB Combustion Engineering Nuclear Power, Inc.[1] (i.e., ABB) approved contract agreement dated December 19, 1994, "General Requirements," states in part that, "Contractor shall coordinate with the CP&L Designated Representative(s) to ensure that all training, qualification, testing, calibration, other preparation, and setup is completed by the required start Work date and time." CP&L letter to ABB dated April 26, 1995, documented CP&L Change Order No. 3 to the terms of the Work Authorization in order to clarify the contract's General Requirements. Change Order No. 3, Item No. 4 states in part that, "Contractor shall perform all Work in accordance with CP&L's Quality Assurance program and procedures."

In accordance with the training and indoctrination provisions of ANSI Standard N45.2.13 - 1974 (Draft 2, Revision 4, April 1974) described above, the training requirements for ABB were specified by CP&L in the contract for ABB under "Contractor General Requirements for Robinson Plant," and were carried out. This provision of the contract required that "Personnel must qualify for work in accordance with CP&L's Qualification of Contractor Personnel Procedures as applicable." Also included in the contract section "Specifications and Procedures," ABB was required to ". . . perform Work in accordance with the latest approved revisions of the following Specification and Procedures . . . ." Included in the required procedure list are procedures Fuel Management Procedure (FMP)-019, "Fuel Insert and Shuffle, "Fuel Handling Procedure (FHP)-001, "Fuel Handling Tools Operating Procedures," and Maintenance Management Manual (MMM)-009, "Operation, Testing, and Inspection of Cranes and Material Handling Equipment."

The CP&L and Becon Construction Company, Inc. approved contract agreement dated September 27, 1993, Section 25, "Quality Assurance Requirements," states in part that, "Contractor shall perform all Work in accordance with CP&L's Corporate Quality Assurance program and all applicable procedures. CP&L will provide Contractor with copies of CP&L's QA program manual and applicable procedures."

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[1] A wholly owned subsidiary of ASEA Brown Boveri, AB.

In accordance with the training and indoctrination provisions of ANSI Standard N45.2.13 - 1974 (Draft, Revision 4, April 1974), the training requirements for contractor personnel were specified by CP&L in the contract for Becon Construction Company, Inc. under Section 1 "Scope of Contractor Obligations," Subsection A "Labor Services," and were carried out. Item 3 of Subsection A states, "Establish and conduct a comprehensive site safety and training program which shall be subject to approval by CP&L's Designated Representative for each Plant prior to implementation." The training program is documented in the "Lesson Plan Catalogue for H. B. Robinson Steam Electric Plant - Becon Construction Company," Revision 4, dated April 6, 1995. Lesson Plan No. 9001, "General Indoctrination" requires training on procedure Modification Implementation Procedure (MIP)-007, "Personnel Qualification Program." Procedure MIP-007 requires that crane operators receive training on procedure MMM-009, and this training was conducted. However, as discussed below, we identified a weakness in that procedure MMM-009 does not reference procedure Maintenance Instruction (MI)-510, "Polar Crane General Instructions," and contractor training lesson plans did not include training on MI-510.

Therefore, the commitment to the provisions of ANSI Standard N45.2.13 - 1974 (Draft, Revision 4, April 1974) to evaluate the QA Program for contracted services was met by the implementation of the purchase contract requiring that contractors meet the provisions of the CP&L QA Program, and by the conduct of training specified in the procurement documents. Furthermore, in accordance with the corrective action provisions of ANSI Standard N45.2.13 - 1974 (Draft 2, Revision 4, April 1974) described above, our Corrective Action Program was effectively implemented by CP&L and contractor personnel and management in that once problems occurred, root cause analyses were performed and corrective actions were identified and taken. In the case of Becon Construction Company, Inc., a meeting between CP&L and Becon executive management held to discuss observed deficiencies early in the outage was effective in improving the performance of Becon personnel. Furthermore, a Nuclear Assessment Section (NAS) assessment of the conduct of the outage identified a concern with contractor personnel radiological protection practices. A procedurally required review of Corrective Action Program Condition Reports during the outage also led to the identification of a negative trend in contractor personnel radiological protection practices. As a result, weaknesses in the training and indoctrination of contractor supervisors and personnel were found. As described below under "The Corrective Steps That Have Been Taken and the Results Achieved," actions to improve the training and indoctrination conducted for contractors are being taken.

The events, as described in the examples for this violation, were specifically reviewed to determine the reasons the events occurred and improvements actions that are being taken to preclude recurrence of these events.

In the first example, during the performance of procedure FMP-019, the contractor failed to successfully perform nineteen steps of the procedure. An evaluation of the May 8, 1995 event was conducted, as required by plant procedures. The root cause analysis found that an error was made by the qualified contractor (i.e., ABB Supervisor) when the thimble plug tool was inadvertently misaligned such that the tool was rotated 90 degrees out of alignment. Procedure FHP-001 contains specific information to ensure proper orientation of the thimble plug tool when engaging a fuel assembly thimble plug. However, the ABB Supervisor failed to review the general precaution in procedure FHP-001 while training two CP&L Refueling Technicians. Because procedure FMP-019 does not contain any steps or precautions to perform an orientation check prior to each use of the fuel handling tool, the refueling technicians performing procedure FMP-019 were unaware that the thimble plug tool was misaligned.

The cause of the first example of this violation is inattention to detail by the qualified ABB Supervisor who failed to follow the requirements of procedure FHP-001 to assure proper orientation of the thimble plug tool. A contributing factor to the event was inadequate verification by personnel performing procedure FMP-019 of thimble plug movement during each step of moving the thimble plugs. An analysis on barriers that could have prevented this occurrence showed that training and indoctrination were not factors that contributed to this error.

An Event Review Team (ERT) conducted an evaluation of the events on May 3 and May 4, 1995, as related to examples 2 and 3 of this violation, respectively. The ERT determined the cause of the event cited in example 2 was an inadequate design of interlocks for the Polar Crane system that affords no protection for certain configurations of the Polar and Manipulator cranes. The interlock system has not changed since the original installation. The ABB Lead Technician failed to confirm adequate clearance around the Manipulator Crane after the Manipulator Crane had been mispositioned. In addition, CP&L lacked a formal communication process to coordinate multiple crane movements simultaneously. Finally, the Polar Crane operator failed to confirm adequate clearance around the Polar Crane prior to beginning the 360 degree rotation. Again, an analysis of barriers showed that additional and/or improved training and indoctrination would not have prevented this event from occurring.

The cause of the event cited in example 3 was a failure of the Polar Crane operator to employ a signalman or maintain visual contact with the Polar Crane auxiliary hook prior to moving the auxiliary hook. The root cause analysis for this event also showed that training and indoctrination were not factors that would have prevented this error.

As discussed above, we have identified corrective actions to address the weaknesses found in contractor supervisory and personnel training as a result of root cause analyses and assessments performed by plant staff, Nuclear Assessment Section personnel, and contractor management. These corrective actions are summarized below under "The Corrective Steps That Will Be Taken to Avoid Further Violations."

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

The ABB Supervisor performing the thimble plug shuffles was relieved from the duties as a Shift Supervisor and his qualifications were suspended.

Additional ABB management oversight was applied for the remaining activities during the Refueling Outage.

On May 10, 1995, an operator Stand Down meeting was held that included a review of this event.

The following actions were taken to enhance visual verification capability during the performance of the remaining thimble plug shuffles:

- increased lighting was provided,
- viewing dish was provided, and
- an additional individual serving as a spotter was provided.

Also, ABB personnel awareness of procedural compliance and verification along with management expectations was increased by conducting extensive debriefings of this event.

Damage to the Manipulator Crane was repaired and the Manipulator Crane was declared operable.

Interim corrective action was taken to provide general guidelines for Polar Crane operators to prevent future crane collisions. The event in example 3 occurred before the guidelines could be fully implemented. The Polar Crane operator was reassigned after the second event.

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

Diverse Polar Crane operating requirements, practices, and protocol will be incorporated into procedures.

Training and qualification requirements for crane operators for the Polar and Manipulator Cranes will be reviewed to ensure that crane operators are fully cognizant of CP&L's expectations. In addition, in response to an evaluation of an adverse trend of contractor personnel errors, future contractor training programs will be reviewed and approved by the HBRSEP Training Advisory Board. The HBRSEP, Unit No. 2, Training Advisory Board is an advisory board consisting of members of the plant management that maintains oversight of training programs.

4. The Date When Full Compliance Will Be Achieved

The improvements described above will be implemented by September 9, 1995.

Violation B

Technical Specification 6.5.1.1.1, Procedures, Tests, and Experiments, states that written procedures shall be established, implemented, and maintained covering the activities recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978, including surveillance testing of the emergency core cooling system. Implicit in this requirement, is the requisite that these procedures be of a type appropriate to the circumstances, with appropriate acceptance criteria for determining that important activities have been satisfactorily accomplished.

Operations Surveillance Test Procedure, OST-156, Safety Injection and Containment Spray Systems Suction Lines Leak Test, is provided to perform leak checks of a portion of the emergency core cooling system were not leak checked during the performance of OST-156.

Contrary to the above, on May 8, 1995, OST-156 was inadequate in that valves SI-887, RHR Pump Discharge To SI and CV Spray Suction and SI-862A, RHR to RWST were closed instead of open. As a result, two portions of the emergency core cooling system were not leak checked during the performance of OST-156.

Reply

CP&L agrees that a violation occurred as described.

1. The Reason for the Violation

Safety Injection (SI) system valve SI-887, located within the surveillance test boundary, had been repositioned in accordance with a Local Clearance and Test Request (LCTR). The failure of the operators to recognize this resulted in a failure to test a portion of the Emergency Core Cooling System (ECCS). The cause of this event was use of a common assumption during the procedure's development that a normal system valve line-up existed as an initial test condition. Operations Surveillance Test Procedure (OST)-156, "Safety Injection and Containment Spray Systems Suction Lines Leak Test," only specified alignment of the system boundary valves and did not direct that operators verify valve positions inside the test boundary. Therefore, on May 8, 1995, during the performance of OST-156, an existing LCTR for valve SI-887 had the valve positioned in the closed position thus preventing leak testing over a portion of the system piping.

The failure to test a section of piping between valves SI-862A and SI-862B was due to the procedure writer not accounting for the possibility of a single active failure in the ECCS during a design basis Loss-of-Coolant Accident in the development of procedure OST-156. Because post-accident Emergency Path Procedure (EPP)-9, "Transfer to Cold Leg Recirculation," allows for either valve SI-862A or valve SI-862B to be positioned closed, valve SI-862A was specified as the test boundary in procedure OST-156 and resulted in a section of piping between valves SI-862A and SI-862B not being tested.

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

Temporary changes to procedure OST-156 were implemented, and affected portions of the surveillance test that tested the section of piping between valves SI-887 and SI-863A and B were again performed on May 9, 1995.

A permanent revision to procedure OST-156 was approved on May 8, 1995, that addresses the configuration of valves SI-862A and B. On May 19, 1995, the affected section of piping was satisfactorily tested. This revision also incorporated the temporary changes described above.

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

Operations Unit personnel will review other procedures that control leak testing of piping systems and revise them as necessary to assure correct system alignment inside test boundaries and to assure that single active failures are accounted for in the determination of the test boundaries.

The Operations Procedures Group personnel will review this event as internal operating experience and to highlight the need to verify the initial valve alignment assumed in the test procedure during plant conditions where valve alignments could be changed from their normal position.

4. The Date When Full Compliance Will Be Achieved

Full compliance will be achieved by November 29, 1995, with completion of any necessary procedure changes.