



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

JUL 22 1981

Report No. 50-261/81-19

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, NC 27602

Facility Name: H. B. Robinson Steam Electric Plant

Docket No. 50-261

License No. DPR-23

Inspector: C. Julian for
S. Weise

7/21/81

Date Signed

Approved by: C. Julian
C. Julian, Acting Section Chief, Division of
Resident and Reactor Project Inspection

7/21/81

Date Signed

SUMMARY

Inspection on June 11 - July 10, 1981

Areas Inspected

This routine announced inspection involved 148 resident inspector hours on site in the areas of technical specification compliance, plant tour, operations performance, plant trips, reportable occurrences, housekeeping, site security, surveillance activities, TMI Action Plan requirements, maintenance activities, quality assurance practices, radiation control activities, inservice inspection program, IE circular and Notice review, outstanding items review, preparation for refueling, and independent inspection effort.

Results

Of the 17 areas inspected, no violations or deviations were identified in 16 areas; one violation was found in one area. (Failure to perform adequate 10 CFR 50.59 reviews and failure to notify the Commission of a change to the FSAR, paragraph 12).

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DETAILS

1. Persons Contacted

Licensee Employees

*R. B. Starkey, Plant General Manager
*C. W. Crawford, Manager, Operations and Maintenance
F. L. Lowery, Unit 2 Operations Supervisor
*J. M. Curley, Manager, Technical Support
F. Gilman, Senior Specialist Regulatory Compliance
*C. Wright, Specialist Regulatory Compliance
W. Farmer, Engineer
C. Bethea, Training Supervisor
S. Allen, Training Specialist

Other licensee employees contacted included technicians, operators, a mechanic, security force members, and office personnel.

Other Organizations

J. Rudisell, Captain, Burns Security Force

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 9, 1981 with those persons indicated in Paragraph 1 above. The licensee acknowledged the findings and stated that the failure to report Modification 383 (discussed in paragraph 12) was a result of their modification control procedures. Modifications, historically, have not been reported until the entire packages is closed, regardless of implementation date. Inasmuch as modification package 383 has not been fully closed, it was not reported. The licensee stated that the modification procedures will be revised to use implementation as the triggering event for reporting to the Commission.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.b.

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5. Technical Specification Compliance

- a. During this reporting interval, the inspector verified compliance with selected limiting conditions for operation (LCO's) and reviewed results of selected surveillance tests. These verifications were accomplished by direct observation of monitoring instrumentation, valve positions, switch positions, and review of completed logs and records. The licensee's compliance with selected LCO action statements were reviewed as they happened. The inspector noted no violations or deviations
- b. The licensee has commenced reorganizing the plant staff in conjunction with changes in the corporate structure. New positions have been created, some of which have been filled by existing or new personnel. Technical Specification 6.2, Organization, states the offsite and facility staff organization requirements. Licensee personnel have been assuming their new organization responsibilities for several months, however, the licensee has not submitted an amendment to Technical Specifications to delineate the new organization and its effect on Plant Operation. Although no explicit violations have been noted, this item is unresolved pending submission of an amendment request and subsequent NRC review. (50-261/81-19-01).

6. Plant Operations Review

The inspector periodically during the inspection interval reviewed shift logs and operations records, including data sheets, instrument traces, and records of equipment malfunctions. This review included control room logs, auxiliary logs, operating orders, standing orders, jumper logs and equipment tagout records. The inspector routinely observed operator alertness and demeanor during plant tours. During abnormal events, operator performance and response actions were observed and evaluated. The inspector conducted random off-hours inspections during the reporting interval to assure that operations and security remained at an acceptable level. Shift turnovers were observed to verify that they were conducted in accordance with approved licensee procedures. The inspector had no further comments.

7. Plant Tour

The inspector conducted plant tours periodically during the inspection interval to verify that monitoring equipment was recorded as required, equipment was properly tagged, operations personnel were aware of plant conditions, and plant housekeeping efforts were adequate. The inspector determined that appropriate radiation controls were properly established, excess equipment or material was stored properly, and combustible material was disposed of expeditiously. During tours the inspector looked for the existence of unusual fluid leaks, piping vibrations, pipe hanger and seismic restraint abnormal settings, various valve and breaker positions, equipment clearance tags and component status, adequacy of firefighting equipment, and instrument calibration dates. Some tours were conducted on backshifts. The inspector noted no violations or deviations.

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8. Plant Trips:

- a. On June 19, 1981, a lighting strike on nearby power lines caused the load drop anticipatory function of the electro-hydraulic control system to function, shutting the turbine and reheat stop valves. The unit was at about 85% power initially. Due to the magnitude of the power transient and its effects on steam generator water levels, the operators manually tripped the reactor. All systems performed as expected with the exception of 'A' auxiliary feedwater (AFW) pump which tripped on low discharge pressure. This and related problems with 'A' AFW pump are discussed in Licensee Event Report 81-17. Since the steam driven AFW pump was out of service for maintenance, this event placed the plant in a limiting condition for operation (LCO). The LCO was terminated after about two and one half hours when 'A' AFW pump was returned to service. The plant returned to power operation early in the morning on June 20, 1981.
- b. On June 20, 1981, the reactor experienced a trip and safeguards initiation from about 90% power when an instrumentation and control technician attempted to replace a train B safeguards test pushbutton. The technician had been replacing one section of the four section switch, but had obtained an incorrect replacement section. Due to the difference in electrical contacts, an electrical transient was experienced on the instrument bus resulting in the actuation of safeguards relays. After determining that the safeguards initiation was not required for plant protection, the operators stabilized plant conditions and reset the safeguards signal and equipment. The error in the switch replacement section was identified and the proper section installed. Satisfactory testing was completed on applicable sections of the reactor protection circuitry, and the reactor was returned to power operation that evening. The inspector will review the licensee's action to prevent recurrence.

9. Physical Protection

The inspector verified by observation and interview during the reporting interval that measures taken to assure the physical protection of the facility met current requirements. Areas inspected included the organization of the security force, the establishment and maintenance of gates, doors and isolation zones in the proper condition, that access control and badging was proper, that search practices were appropriate, and that escorting and communications procedures were followed. The inspector attended security force retraining on the plant security plan. No violations or deviations were noted.

10. Inservice Inspection Program (ISI)

The inspector reviewed the licensee's revised ISI program as transmitted to the Office of NRR by letter dated March 10, 1981. This letter committed the licensee to completing the requirements for the second quarter by July 1, 1981. The inspector reviewed the quarterly portion of the revised program

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against the licensee's ISI Periodic Tests which implement the program. The following discrepancies were noted:

- a. The following valves were not tested quarterly as required: sampling valve 959, safety injection valves 870 C and D, power operated relief valves (PORVS) 455C and 456, PORV block valves 535 and 536, service water valves 580 and 581, and check valve V8-5.
- b. The boric acid transfer pump ISI Periodic Test 7.1A was not completed prior to July 1, 1981.

Following discussions with licensee personnel the inspector determined that the valve discrepancies were due to errors in the submitted program. Several valves were actually flow switches (SW 580 and 581). Several valves should not have been included in the program (SS-959, SI 870C and D, V8-5). The PORV and block valves were intended to be tested at cold shutdown vice quarterly. Licensee personnel stated that a revision to the program would be transmitted to NRR. This is an inspector followup item. (50-261/81-19-02).

The ISI testing on the boric acid transfer pumps was completed satisfactorily on July 6, 1981. The inspector noted that these pumps are run at least three hours per week while recirculating the boric acid storage tanks. The licensee stated that the delay was caused by gauge calibration procedure revisions. The inspector had no further questions.

11. Preparation for Refueling

The inspector reviewed the licensee's procedures for the handling of new fuel assembled during the unloading and receipt inspection operations. The inspector observed the receipt, inspection, and storage of a sampling of new fuel elements (for use in Cycle 9) by the licensee and verified that these operations were performed in accordance with licensee procedures. The inspector reviewed the Training Instruction, TI-109, Qualification of Fuel Inspection Personnel and verified by document review that fuel inspectors had completed this qualification. Completed fuel inspection records will be reviewed at a later date. No violations or deviations were identified in this area.

12. Independent Inspection Effort

Based on the inspector's knowledge of the abnormal use of a waste condensate tank (WCT) for storage of primary coolant waste water, a further review of this occurrence was made to determine that applicable requirements were met. During the primary coolant leak event of November 27, 1980 (documented in Licensee Event Report 80-28), failure of the Waste Evaporator necessitated the transfer of waste water from the Waste Holdup Tank (WHUT) to the A, B, and E WCT's. This was done to provide WHUT volume for the dewatering of the containment sump. A and B WCT's are located inside the auxiliary building, while C, D, and E WCT's are located outside the auxiliary building and are vented directly to atmosphere. E WCT was filled to 90% level with untreated

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waste water on November 27, 1980. The activity level of this water was never determined.

This transfer of water was allowed by Administrative Instruction Section 5.3, Deviations From Established Procedures, using the justification that: a) the safety of equipment was jeopardized by allowing the water to remain uncontaminated in either the containment or the auxiliary building sumps and b) with the WHUT at 96% capacity in conjunction with a 22 gpm primary to containment atmosphere leak, there was the potential for an unplanned release. Once the transfer was made, E WCT was placed under clearance to prevent inadvertent release of its contents. The waste evaporator was repaired by November 28th, and the water removed from E WCT by December 3, 1980.

Due to E WCT's location and its design for storage of low activity waste evaporator distillate, a 10 CFR 50.59 review should have been performed on the consequences of storing untreated waste water in these tanks. Additionally, the unvalved tank vent constituted an unreviewed unmonitored release path to the environment. The Plant Nuclear Safety Committee (PNSC) reviewed the deviation on November 28th and concurred with its implementation, however no 10 CFR 50.59 review documentation exists to justify that the storage of untreated waste water in E WCT was not an unreviewed safety question.

The inspector next reviewed plant Modification 383, which documented the installation of the new, increased-capacity waste evaporator; C, D, and E WCT's; and associated piping and instrumentation. The modification was designed in 1977, and PNSC approved it for installation in July, 1977. The system became operational in early 1978. The inspector's review found the licensee had determined that the modification was a change to the FSAR, but not an unreviewed safety question. The discussion of the safety implications attached with Section B of the modification stated that: a) precautions were taken during the design phase to eliminate possible trouble points that could result in inadvertent release of liquids with low level activity and b) all overflows from potential radioactive systems are routed to the auxiliary building sump. The inspector noted that this was an inadequate justification of the issue to determine that it was not an unreviewed safety question, in that:

- a. the review does not address the potential for an inadvertent and/or unmonitored release from the vent lines from C, D, E WCT's nor the potential effects of such a release,
- b. the review does not quantify the term low level activity, and
- c. Section 14.2.2. of the FSAR states that all liquid waste components are located in the auxiliary building except the reactor coolant drain and the pressurizer relief tanks and any leakage from the tanks or piping will be collected in the building sump to be pumped back into the liquid waste system. Subsequent to Modification 383, this was no

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longer true. The FSAR also assumes the WCT's are 1000 gallons each (A and B) vice 10,000 gallons each (C, D, E).

In as much as the original safety evaluation for the modification was inadequate, the lack of a documented safety evaluation for the transfer of untreated waste water constitutes an inadequate safety review. The above two examples (waste water transfer and Modification 383) of the failure to perform an adequate 10 CFR 50.59 review constitute a violation. (50-261/81-19-03).

The inspector also noted that Special Procedures #250 and #295 had been reviewed and approved by the PNSC for transferring reactor letdown water and WHUT water, respectively, to C, D, or E WCT's. These procedures were also not considered as involving an unreviewed safety question, however, the inspector could not identify that the two procedures had ever been used.

The inspector's review of Modification 383 and the licensee's Annual Report to the Commission determined that the licensee had not reported the change to the FSAR involved in the modification including a summary of the safety evaluation. This failure to report is an additional example of the violation. This issue is further discussed in paragraph 2.

The inspector noted that the licensee had identified the unvalved vent lines from C, D, and E WCT's as potential sources of radioactive spills should an incorrect valve lineup be made during recirculation of a full tank. This resulted in the licensee administratively limiting the filling of these tanks in excess of 45 percent until modifications are made to prevent overflow from the system. This administrative limit was disseminated by memorandum to the operators in January, 1980, but has never been formally proceduralized. This item is open pending incorporation of this administrative limit in the plant operating manual. (50-261/81-19-04). The inspector will also follow-up on the design, approval, and implementation of a modification to prevent WCT overflow from the tank vent. (50-261/81-19-05).

13. TMI Action Plan Requirements

- a. TAP No. I.C.5. Feedback of Operating Experience. This item required that the licensee review and revise, as necessary, their procedures to assure that operating experiences are fed back to operators and other personnel. These procedures are to address the seven areas specified in NUREG 0737. The inspector reviewed the licensee's Training Instruction-303 which is the procedure for Dissemination of Information/Feedback of Operating Experience and held discussions with appropriate plant personnel. The training instruction addresses items (1) through (5) of the staff position. The periodic audit required by item (7) is included in the Corporate Quality Assurance, Performance Evaluation Unit Audit schedule on a semi-annual basis. The criteria for the audit are being developed. Item (6) is not specifically covered by the procedure, although the personnel involved appear to understand their responsibilities in this area.

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Based on discussions with plant and corporate personnel, the inspector understands that the licensee is reorganizing its offsite organization to assume the duties noted above. The offsite organization, as presently envisioned, will consist of a Principal Engineering support group which will review material for applicability and recommend its transmittal to the site via a Manager for Corporate Nuclear Safety and a Director of Onsite Nuclear Safety (ONS). The Onsite Nuclear Safety Group (corporate personnel at the site), which reports to the Director of ONS, will interface with plant personnel in investigating events and developing appropriate feedback actions. This new onsite group will probably assume many of the functions performed by plant personnel.

The inspector is satisfied that the present feedback system adequately meets the requirements. In order to ensure that the anticipated corporate replacement program meets the requirements, the inspector will re-inspect this area at a later date as an inspector followup item (50-261/81-19-06). This item is closed.

- b. TAP No. II.B.4, Item 2A, NUREG 0737. Training for Mitigating Core Damage. This item required the licensee to develop a training program to teach the use of installed systems and equipment to control or mitigate accidents in which the core is severely damaged. The inspector reviewed the lesson plans for this training program and attended portions of a recent class. The inspector noted three areas in the lesson plan that did not fully satisfy the requirements of Enclosure 3 to H. R. Denton's letter (NRR) of March 28, 1980. These discrepancies were immediately rectified and action was initiated to disseminate to and document that this information was received by all operators that had previously taken the training. The inspector had no further questions on the implementation and adequacy of the training program. This item is closed.
- c. TAP No. I.A.1.3, Item 1: Shift Manning . Limit Overtime, NUREG 0737. The licensee's Administrative Instructions, section 4, on use of overtime discourages overtime. This instruction applies to Shift Foreman, Senior Control Operators, Control Operators, and Shift Engineers. Additionally, the instruction only applies when the reactor coolant system temperature is above 200°F and when fuel is being moved within the reactor vessel. Health physicists, auxiliary operators, technicians, and key maintenance personnel are not specifically addressed, although the overtime limitation may be applied to other key safety personnel at the discretion of the Plant Manager

The licensee's procedures specify the following overtime restrictions:

- a. An individual shall not be permitted to work more than 12 hours straight (not including shift turnover time).
- b. An individual will have at least the same number of hours off between work periods as the length of his last work period (not including shift turnover time).

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- c. An individual shall not work more than 84 hours in any 7 day period (not including shift turnover time).
- d. An individual shall not work more than 14 consecutive days without having two consecutive days off.

These restrictions are in substantial agreement with the requirements. The licensee does, as permitted, allow deviations from the above, if it is authorized by the Plant Manager. Documentation of the unusual circumstances is made on the individual's time sheet.

The licensee's procedures do not address nor does management support the requirement that time on the control board be limited to about four hours of continuous duty if the operator is to work more than eight continuous hours.

The licensee has documented his disagreement along with his evaluation as to the adequate safety of his present policy in CP&L letter NO-81-346, Limitation on Overtime Required of Licensed Operators, dated February 26, 1981 to the Director, Division of Licensing, Office of Nuclear Reactor Regulation. This item is closed.

14. Licensee Event Report (LER) Followup

The inspector reviewed the following LER's to verify that the report details met license requirements, identified the cause of the event, described appropriate corrective actions, adequately assessed the event, and addressed any generic implications. Corrective action and appropriate licensee review of the below events was verified. The inspector had no further comments.

LER	Event
81-04	Sample cooler leak to component cooling water system
81-14	First stage turbine pressure module nonconservative shift
81-15	'A' Steam flow channel computer module erratic operation

15. Review of IE Circulars and Notices (IEC's and IEN's)

- a. The inspector verified that IE Circulars and Notices had been received onsite and reviewed by cognizant licensee personnel. Selected applicable IE Circulars and Notices were discussed with licensee personnel to ascertain the licensees actions on these items. The inspector also verified that IE Circulars and Notices were reviewed by the Plant Nuclear Safety Committee in accordance with facility administrative policy. Licensee action on the following IE Circulars and Notices were reviewed by the inspector and are closed.

<u>IE Circulars</u>	<u>IE Notices</u>
80-12	80-32
80-21	80-34
81-03	80-37
81-06	80-38
	80-42
	80-44

b. IE Notice 80-01 Fuel Handling Events.

The inspector reviewed the licensee's review of this item, the fuel handling procedures, and the Periodic Fuel Handling Equipment Interlock and Operation Test (PT 26.0). The present controls to prevent fuel handling events appear acceptable. The inspector had some concerns with Section G, Manipulator Crane, of PT 26.0. This procedure neither checks the proper position of the upward travel limit switch nor records the tape reading corresponding to that position. This position, however, is reportedly marked on the tape and the accompanying air hose, and limit switch operation is tested. The gripper tube down position is reportedly marked on the tape measure but not recorded for historical data. Recording of the above tape readings could provide advance indication of positioning equipment or tape measure functional problems. The inspector will review the equipment function and checkout prior to the next refueling. Inspector followup item 50-261/81-19-07). The Notice is closed.

16. Outstanding Items Review

- a. (Closed) Open Item 81-08-02. This item concerned the fact that the Spray Additive Tank Low Level alarm was set at 33% \pm 1% while Technical Specification 3.3.2.1a. requires a minimum tank level of about 35%. The licensee has changed the low level alarm setpoint to 36% \pm 1% and has revised plant procedure PSL-7. This item is closed.
- b. (Closed) Inspector Followup Item 81-12-01. This item concerned discrepancies noted in the reliability and operability of boric acid heat tracing records. The inspector has reviewed the condition of these records over the past weeks and determined that their readability and performance has improved. Maintenance and operations personnel appear to be more responsive to recorder and system discrepancies. This item is closed.

17. Licensee Identified Violation

On June 18, 1981, the licensee reported to the inspector that they were in violation of 10 CFR 19.11(a).(4) and 19.11.(e). This was due to their past failure to post within two working days copies of the following documents:

- a. Proposed imposition of civil penalty

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- b. Orders issued pursuant to Subpart B of 10 CFR 2
- c. Any licensee response

Licensee corrective action was to immediately post the required documents. These documents are to remain posted as specified in 10 CFR 19.11.(e). Further administrative actions will be taken to ensure that documents are posted as required. The inspector had no further questions.

18. Performance Appraisal Evaluation

During this inspection period the plant site and corporate offices were inspected by an NRC Performance Appraisal Team. This team will complete their inspection of licensee management and operations on July 17, 1981. Their findings will be documented in a future report to the licensee.