



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

Report No.: 50-261/90-26

Licensee: Carolina Power and Light Company  
P. O. Box 1551  
Raleigh, NC 27602

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Conducted: November 11 - December 10, 1990

Inspector: H. O. Christensen 1/4/91  
L. W. Garner, Senior Resident Inspector Date Signed

Other Inspectors: M. M. Glasman, Project Engineer  
K. R. Jury, Resident Inspector

Approved by: H. O. Christensen 1/4/91  
H. O. Christensen, Section Chief Date Signed  
Reactor Projects Branch 1  
Division of Reactor Projects

SUMMARY

Scope:

This routine, announced inspection was conducted in the areas of operational safety verification, maintenance observation, and action on previous inspection findings.

Results:

The licensee agreed to submit a Technical Specification amendment to correct an improper reference in instrumentation table 3.5-4.

## REPORT DETAILS

### 1. Persons Contacted

R. Barnett, Manager, Outages and Modifications  
C. Baucom, Shift Outage Manager, Outages and Modifications  
J. Benjamin, Shift Outage Manager, Outages and Modifications  
\*W. Biggs, Manager, Nuclear Engineering Department Site Unit  
S. Billings, Technical Aide, Regulatory Compliance  
\*M. Burch, Foreman, Environmental and Radiation Control  
R. Chambers, Manager, Operations  
D. Crook, Senior Specialist, Regulatory Compliance  
J. Curley, Manager, Environmental and Radiation Control  
C. Dietz, Manager, Robinson Nuclear Project  
D. Dixon, Manager, Control and Administration  
J. Eaddy, Supervisor, Environmental and Radiation Support  
S. Farmer, Supervisor - Programs, Technical Support  
E. Harris, Manager, Onsite Nuclear Safety  
\*J. Kloosterman, Director, Regulatory Compliance  
D. Knight, Shift Foreman, Operations  
E. Lee, Shift Outage Manager, Outages and Modifications  
A. McCauley, Supervisor - Electrical Systems, Technical Support  
R. Moore, Shift Foreman, Operations  
D. Nelson, Shift Outage Manager, Outages and Modifications  
\*M. Page, Manager, Technical Support  
\*R. Parsons, Manager, Robinson Engineering Support  
\*D. Quick, Manager, Plant Support  
D. Seagle, Shift Foreman, Operations  
\*J. Sheppard, Plant General Manager  
\*R. Smith, Manager, Maintenance  
R. Steele, Shift Foreman, Operations  
D. Winters, Shift Foreman, Operations  
H. Young, Director, Quality Assurance/Quality Control

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

\*Attended exit interview on December 18, 1990.

Acronyms and initialisms used throughout this report are listed in the last paragraph.

### 2. Operational Safety Verification (71707)

The inspectors evaluated licensee activities to confirm that the facility was being operated safely and in conformance with regulatory requirements. These activities were confirmed by direct observation, facility tours, interviews and discussions with licensee personnel and management, verification of safety system status, and review of facility records.

To verify equipment operability and compliance with TS, the inspectors reviewed shift logs, Operations records, data sheets, and records of equipment malfunctions. Through work observations and discussions with Operations Staff members, the inspectors verified the staff was knowledgeable of plant conditions, responded properly to alarms, adhered to procedures and applicable administrative controls, and aware of inoperable equipment status. Shift changes were observed, verifying that system status continuity was maintained and that proper control room staffing existed. Access to the control room was controlled and operations personnel carried out their assigned duties in an effective manner. Control room demeanor and communications continued to be informal yet effective.

Plant tours and perimeter walkdowns were conducted to verify equipment operability, assess the general condition of plant equipment, and to verify that radiological controls, fire protection controls, physical protection controls, and equipment tagging procedures were properly implemented.

#### Improper TS Reference

Technical Specification Instrumentation Table 3.5-4 item 2.b, Steam Line Isolation High Containment Pressure, referenced item no. 1 of Table 3.5-3 for minimum operable channels and minimum degree of redundancy requirements. The referenced item was the safety injection functional unit. This item specified that for High Containment Pressure (Hi level), the minimum channels operable and minimum degree of redundancy are 2 and 1, respectively. However, TS Table 3.5-1 item 2, listed the steam line isolation channel action as being associated with the high containment pressure (Hi-Hi level) functional units, not the high containment pressure (Hi level) functional unit. Review of safeguards system drawings 5379-3233 and 5379-3235 confirmed that the high containment pressure (Hi-Hi level) were the correct functional units. The minimum channels operable and minimum degree of redundancy requirements for the high containment pressure (Hi-Hi level) function units were specified in TS Table 3.5-3 item 2.b, as being 2/set and 1/set respectively. These were the requirements which should have been referenced by TS Table 3.5-4 item 2.b. The inspectors discussed this discrepancy with the Director of Regulatory Compliance. The licensee has agreed to submit a TS amendment to correct the improper reference.

#### Radiological Barriers

During the report period, the inspectors inadvertently entered roped-off radiologically controlled areas. In one instance, the rope barrier was routed inside scaffolding such that the inspector when stooping to climb through the scaffolding unintentionally ducked under the yellow-magenta rope delineating an airborne area. An HP observed the inspector and motioned him to back out of the area. The area had been designated as an airborne area because of the potential for airborne contamination due to check valve SI-876B inspection activities in the overhead. The inspector

expressed concern to the HP that the rope did not form an obvious physical barrier. The HP immediately placed a sign on this section of rope such that the area boundary was more readily identified. Approximately five minutes after the inspector had entered the area, another individual without a respirator was seen exiting this same area after passing through the area. The HP discussed with the individual what he had done and cautioned him to be more observant of postings. At the time of these events it was fortuitous that no work was in progress and the previously open system was covered, e.g. area was not airborne.

In the other instance, a portion of the rope barrier had been removed to facilitate material removal such that the inspector unknowingly walked into a contaminated area. An HP immediately stopped the inspector who was later determined not to be contaminated. The inspectors observed that the step-off pad was partially folded on top of itself. The HP was apparently preparing to correct these conditions at the time of the event. However, since the removed material was no longer in the area, it was apparent that the barrier had not been immediately restored. The inspectors discussed with E & RC Manager the above items including the desirability of establishing and maintaining radiological controlled areas with physical barriers to restrict access.

No violations or deviations were identified.

### 3. Monthly Maintenance Observation (62703)

The inspectors observed safety-related maintenance activities on systems and components to ascertain that these activities were conducted in accordance with TS and approved procedures. The inspectors determined that these activities did not violate LCOs and that required redundant components were operable. The inspectors verified that required administrative, material, testing, radiological, and fire prevention controls were adhered to. In particular, the inspectors observed/reviewed the following maintenance activities:

SP-961 (Revision 4)	Special Procedure for Expanded Maintenance and Repair of CCW Heat Exchangers A and B
WO/JO 90-ALUJ1	CCW Heat Exchanger Tube Plug Removal and Leak Detection
WO/JO 90-ANMN2	Removal and Retubing of CCW Heat Exchangers A and B
WO/JO 90-APUS1	Removal/Cleaning/Reinstallation of CCW Heat Exchanger End Covers

No violations or deviations were identified.

## 4. Action on Previous Inspection Findings (92701, 92702)

(Closed) IFI 88-28-07, Inspect PM to Establish Isolation as Required by Appendix R for TE-410 and TE-413. The licensee's review of plant modification M-896 indicated that cables associated with RCS temperature elements TE-410 and TE-413 (T hot and T cold respectively) were routed through fire area A. These instruments are used in the dedicated/safe shutdown system to stabilize the plant in case of fire in fire area A. Per an earlier modification, M-445, the cables were removed from the fire area A. Due to an inadequate engineering review, however, plant modification M-896 rerouted the cables back into fire area A. To solve this problem, the licensee implemented field change DCN 896-15 to install isolation devices in the north and south cable vault rooms where the electrical penetrations are located. These isolators fulfill the requirements of RG 1.97 and Appendix R by preventing faults in parallel channels (such as might be caused by a fire) from interfering with T hot and T cold indications on the safe shutdown panels. This item is considered closed.

(Closed) Violation 88-28-09, Failure to Correct Sump Pump Controls Which Resulted in Radioactive Releases to the Storm Drain System. On August 8, 1988, the licensee discovered radioactive contamination in three storm drains near the E & RC building. The licensee strongly suspected the source of contamination to be from the E & RC building sump, which receives primary coolant samples following analysis. Further investigation revealed the E & RC sump was full, and the sump pump high and low level switches were hooked up backwards. This resulted in contaminated liquid backing up into the E & RC laboratory floor drains, spilling onto the laboratory floor, seeping through bolt holes in the floor flange of the drain, and into voids between the poured concrete floor and the outside of the drain pipe. The contaminated liquid then flowed into a french drain beneath the E & RC building, and into the storm drains. The licensee's immediate corrective actions included repair of the sump pump controls, and pumping the contaminated liquid out of the storm drains and the E & RC sump into the radioactive waste system for treatment. The licensee indicated no radionuclides were detected at the site release point. The licensee grouted the void around the laboratory drain pipe, and tested the laboratory waste drainage system with satisfactory results. In addition, the sump pump level control system was repaired, tested with satisfactory results, and CP-013, E & RC Building Sump Surveillance, was written to ensure E & RC sump level is monitored and abnormal conditions are reported promptly. The inspector also reviewed SCR-88-017, Investigation Into the Release of the Root Cause of the Uncontrolled Release of Radioactive Material From the E & RC Building on August 9, 1988. In addition to the above corrective actions, the SCR also successfully addressed: the licensee's failure to realize that the E & RC sump was a highly probable contamination release point or could indirectly cause a release; the lack of a root-cause analysis on a previous E & RC sump level control malfunction, and unclear definition of responsibility for ownership of the E & RC sump. The inspector conducted interviews with the E & RC support supervisor, and a chemistry technician, walked down portions of the E & RC laboratory and sump system, and reviewed the CP-013 daily log

of the E & RC sump level. During the walkdown, the inspector found the high-level alarm on the E & RC sump was in need of repair in that the alarm sounded constantly, even though the liquid level was well below the upper limit. The licensee compensated for this problem by checking the sump level at least daily. A work request, 90-ANGJ2 was written on November 1, 1990, to repair the high level alarm, which at the time of the inspection, had not been performed. In addition, the licensee indicated to the inspector that the E & RC sump and associated systems was assigned to the radioactive waste system engineer. The inspector had no further concerns, as the primary problem of an uncontrolled release pathway to the environment was repaired, and the daily surveillance performed by E & RC should identify E & RC sump problems, should they occur. This item is considered closed.

No violations or deviations were identified.

#### 5. Exit Interview (30703)

The inspection scope and findings were summarized on December 18, 1990, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection findings listed in the summary. Dissenting comments were not received from the licensee. Proprietary information is not contained in this report.

#### 6. List of Acronyms and Initialisms

CCW	Component Cooling Water
CP	Chemistry Procedure
DCN	Design Change Notice
E & RC	Environmental and Radiation Control
HP	Health Physicist
IFI	Inspection Follow Item
LCO	Limiting Condition for Operation
M	Modification
NRC	Nuclear Regulatory Commission
PM	Plant Modification
RCS	Reactor Coolant System
RG	Regulatory Guide
SCR	Significant Condition Report
SP	Special Procedure
TE	Temperature Element
TS	Technical Specification
WR/JO	Work Request/Job Order