



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W., SUITE 2900
 ATLANTA, GEORGIA 30323-0199

Report No.: 50-261/93-15

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 Unit 2

Inspection Conducted: June 12 - July 9, 1993

Inspector: *[Signature]* *7/23/93*
 W. T. Orders, Senior Resident Inspector

7/23/93
 Date Signed

Inspector: *[Signature]* *7/23/93*
 C. R. Ogle, Resident Inspector

7/23/93
 Date Signed

Approved by: *[Signature]*
for H. O. Christensen, Chief
 Reactor Projects Section 1A
 Division of Reactor Projects

7/23/93
 Date Signed

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of operational safety verification, surveillance observation, maintenance observation, engineered safety feature system walkdown, plant safety review committee activities, and followup.

Results:

A weakness was identified concerning the lack of a formal documented program to facilitate the routine update of the FSAR (paragraph 6).

A weakness was identified concerning the failure to properly calibrate heat trace recorder number 1 (paragraph 7).

A weakness was identified concerning the failure to maintain configuration control of the B BAST temperature controller (paragraph 7).

REPORT DETAILS

1. Persons Contacted

- R. Barnett, Manager, Outages and Modifications
- C. Baucom, Senior Specialist, Regulatory Compliance
- *D. Bauer, Regulatory Compliance Coordinator, Regulatory Compliance
- B. Clark, Manager, Maintenance
- T. Cleary, Manager, Technical Support
- D. Crook, Senior Specialist, Regulatory Compliance
- C. Dietz, Vice President, Robinson Nuclear Project
- *R. Elmore, Senior Specialist, Maintenance Support
- *W. Flanagan Jr., Acting Plant General Manager
- *W. Gainey, Manager, Plant Support
- *J. Harrison, Manager, Regulatory Compliance
- *M. Scott, Manager, Performance Engineering
- D. Waters, Manager, Regulatory Affairs
- *D. Winters, Shift Supervisor, Operations

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

NRC Managements Visits

During the report period, Singh Bajwa, Acting Project Director, Project II-1, NRR and Johns Jaudon, Deputy Division Director, Division of Reactor Safety, Region II visited the site.

*Attended exit interview on July 15, 1993.

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

2. Plant Status

The unit began the report period operating at 100 percent power and continued to operate at or near full power until July 3. Power was reduced to 88 percent on that date in order to perform Engineering Surveillance Test EST 003, F delta I Flux Correlation. On July 4 power was reduced to 67 percent to facilitate the performance of Operations Surveillance Test OST 551, Turbine Valve and Trip Function Test. Later that day, power was further reduced to 45 percent to perform maintenance on the A condensate pump. Following completion of this maintenance, the unit was returned to full power on July 6, where it operated for the remainder of the report period.

3. 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, Operation's records, data sheets, instrument traces, 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, cognizant of in-progress surveillance and maintenance activities, and aware of inoperable equipment status. The inspectors performed channel verifications and reviewed component status and safety-related parameters to verify conformance with TS. Shift changes were routinely 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 were appropriate.

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.

No violations or deviations were identified.

4. Surveillance Observation (61726)

The inspectors observed certain safety-related surveillance activities on systems and components to ascertain that these activities were conducted in accordance with license requirements. For the surveillance test procedure listed below, the inspectors determined that precautions and LCOs were adhered to, the required administrative approvals and tagouts were obtained prior to test initiation, testing was accomplished by qualified personnel in accordance with an approved test procedure, test instrumentation was properly calibrated, and that the tests conformed to TS requirements. Upon test completion, the inspectors verified the recorded test data was complete, accurate, and met TS requirements, test discrepancies were properly documented and rectified, and that the systems were properly returned to service. Specifically, the inspectors witnessed/reviewed portions of the following test activity:

OST-302

Service Water System Component Test
(Quarterly)

No violations or deviations were identified.

5. 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, approved procedures, and appropriate industry codes and standards. 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:

WR/JO 93-AGLB1	Install On Point 29 A Spare Type T Thermocouple For Temperature Test
WR/JO 93-AGHQ1	Repairs To B BAST Controller
WR/JO 93-BTI 272	Calibrate The CVCS Hold-Up Tank And Header Pressure Instrumentation

No violations or deviations were identified.

6. Review of Licensee's Program for Evaluating Changes to the Environs Around the Plant (TI 2515/112)

The objective of this inspection was to review the licensee's program for identifying, evaluating, and documenting changes in population distributions, or industrial, military, or transportation hazards on or near the site that may have occurred since the plant was originally licensed. As a constituent of this inspection, the licensee's program for updating the FSAR was also reviewed.

The FSAR is required to be updated annually, pursuant to CFR 50.71(e). The inspector reviewed Robinson Administrative Procedure AP-021, Development, Review, and Approval of Changes To The Safety Analysis Report, as well as, higher tier procedures such as NED-3.2 and NGGM 304-01, which describe the licensee's program intended to ensure that updates to the FSAR are accomplished. The inspectors noted that the guidance provided in these procedures dealt almost exclusively with the mechanism of processing the paperwork associated with an FSAR update, but do not embody the more universal instruction such as how, when, or why, an update is to be originated. Tersely restated, there is not a formal documented program in place to facilitate the routine update of the FSAR. Furthermore, and more germane to the immediate issue, the inspector concluded that the licensee does not have a formal program to periodically review changes in population or industrial, military, or transportation hazards to ensure that the effects from potential changes are identified, evaluated, and documented. This is considered a program weakness.

The inspector reviewed the applicable chapters of the licensee's updated FSAR dealing with demography and site proximity hazards, issues which

are in the main, embodied in Chapter 2, Site Characteristics. The inspector noted that although two revisions of the FSAR have been made since the conclusion of the 1990 census, the population data used in the FSAR is still predicated upon the 1980 census data. Although this demographic information has not been updated, the inspector's determined that as part of the licensee's Radiological Emergency Response program, demographic changes are reviewed periodically to update estimates of the time required to evacuate personnel from the emergency planning zones around the site. The latest evacuation time estimate study was based on 1990 census data. The inspector compared the demographic data embodied in the time study with comparable data in the FSAR and did not detect obvious anomalies.

The inspector also reviewed applicable documentation pertaining to changes to the exclusion area, major changes to transportation routes, addition or changes to major industrial, medical or institutional, or military facilities near the site, routing of gas pipelines, and hazardous or explosive material processing or manufacturing facilities near the site, to determine if any significant changes had occurred that may have warranted evaluation and FSAR update. The inspector's review detected no substantial changes which would have significantly affected the plant. In as much as there is not a formal program in place to periodically identify such items, the potential exists for more significant changes to occur without being evaluated. The licensee indicated that they would evaluate their existing program for updating the FSAR. The inspectors will review the results of this evaluation upon completion. This item is identified as IFI 261/93-15-01: Review Licensee Evaluation of TI 2515/112 Weakness.

No violations or deviations were identified.

7. Followup (92700, 92701, 92702)

(Closed) URI 93-11-03, Potential Inoperability Of The Boric Acid Storage Tanks. Inspection Report 93-11 describes low temperature indications in CVCS piping coincident with the recirculation of both the A and B BASTs. Following these initial observations, the licensee completed an operability determination on June 2, 1993, and preliminarily concluded that both BASTs had been inoperable for an unknown period of time. This item was tracked as URI 93-11-03 pending the licensee's resolution of the issue of past inoperability.

Following these initial observations, the licensee determined that heat trace stripchart recorder number 1 was indicating temperatures approximately 10° F lower than actual. This 10° F offset was attributed to an error in the calibration procedure specifically in the determination of a correction for the stripchart recorder's range card temperature compensation. The technical manual requires that a compensation be made for the junction created at the test device-range card connection based upon ambient temperatures in the immediate vicinity of the range card. The licensee determined that the actual temperature on the range card was approximately 10° F higher than the

air temperature a few inches from the strip chart recorder. The inspectors witnessed the simultaneous determination of the range card and ambient temperatures and concur with the magnitude of the error introduced. The stripchart recorder was subsequently recalibrated to eliminate this error. The inspectors independently reviewed data taken on CVCS piping temperatures during BAST recirculation's before and after this calibration. The inspectors noted approximately a 10° F rise in the minimum temperatures observed in both recirculation flowpaths following this calibration.

The licensee also determined that despite a previous satisfactory check of the B BAST temperature controller, it indicated erroneously elevated temperatures over the normal operating range. A technical representative determined that a linearity adjustment link between the drive coil and the driver lever of the pin movement was mis-positioned. The link was repositioned and the temperature controller was recalibrated. The inspectors witnessed this calibration. The licensee could not determine how the link became mis-positioned. An inspection of the A BAST temperature controller indicated that this link was in the proper position.

The licensee reviewed heat trace stripchart printouts for the period spanning from February to May 1993. The licensee stated that the lowest temperature indicated on any heat trace circuit during recirculation for this review period was 138° F. Independently, the inspectors selectively reviewed stripchart recordings for this period and confirmed the licensee's conclusions.

Based on this 138° F minimum temperature and the 10° F offset in the stripchart recorder, the inspectors concluded that the BAST temperatures were not below the TS minimum of 145° F, and that the BASTs had been operable. However, the failure to properly calibrate the stripchart recorder and to maintain control of the B BAST temperature controller are considered weaknesses. URI 93-11-03 is closed.

(Closed) URI 93-11-06, Offset Required In Heat Trace Alarm Circuitry and Disabled Indicator For Boric Acid Heat Trace Temperatures. Inspection Report 93-11 details the inspector's observation of a June 2, 1993, calibration of boric acid heat trace recorder number 1. During the calibration of the annunciators, the inspectors noted that the desired alarm setpoints, as entered into the electronic controller for the stripchart recorder, were approximately 9 degrees higher than the nominal 150°F setpoint. Additionally, during this calibration, it was noted that circuit 31 had been disabled. During subsequent discussions the system engineer stated that he had previously found another circuit similarly disabled. These observations were documented as URI 93-11-06.

The licensee's investigation revealed that the range diode which can be adjusted to reflect the range and type of input to the recorder, was improperly positioned on the alarm CPU board. On June 30, 1993, a new CPU card with the range diode in the proper position was installed. During the subsequent calibration, the licensee indicated no offset was

required in the electronic controller to have the annunciators alarm at the nominal setpoints. The licensee indicated that an inspection of other heat trace stripchart recorders revealed three similar mis-positioned diodes. The licensee committed to replace the three diodes when replacement parts are received. The licensee was unable to ascertain when the diodes in heat trace recorder 1 had been mis-positioned.

The licensee's investigation of the two disabled heat trace temperature indicating circuits failed to reveal the length or cause of the disabled indications. The system engineer stated that both points had been indicating on or about May 26, 1993. The two disabled circuits were discovered on June 1, 1993, and June 2, 1993. Thus both circuits were disabled for approximately one week.

The inspectors concluded that the mis-positioned diode and defeated indicating circuits did not render the boric acid system inoperable. However, the failure to adequately control the configuration of the boric acid stripchart recorder number 1. Boric acid stripchart recorder number 1 and its annunciator is considered a weakness. URI 93-011-06 is closed.

No violations or deviations were identified.

8. Exit Interview (71701)

The inspection scope and findings were summarized on July 15, 1993, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection findings listed below and in the summary. Dissenting comments were not received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

9. List of Acronyms and Initialisms

ACR	Adverse Condition Report
BAST	Boric Acid Storage Tank
CCW	Component Cooling Water
CFR	Code of Federal Regulation
CPU	Central Processing Unit
EST	Engineering Surveillance Test
FSAR	Final Safety Analysis Report
LCO	Limiting Condition of Operation
NED	Nuclear Engineering Department
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OST	Operations Surveillance Test
Psig	Pounds per square inch - gage
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RTGB	Reactor Turbine Gauge Board

SW
TS
URI
WR/JO

Service Water
Technical Specification
Unresolved Item
Work Request/Job Order