UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 29, 2001

Carolina Power & Light Company
ATTN: Mr. John W. Moyer
Vice President
H. B. Robinson Steam Electric Plant
Unit 2
3851 West Entrance Road
Hartsville, SC 29550

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT- NRC INTEGRATED INSPECTION REPORT 50-261/01-04

Dear Mr. Moyer:

On September 29 , 2001, the Nuclear Regulatory Commission (NRC) completed an inspection at your Robinson facility. The enclosed report documents the inspection findings which were discussed on October 3, 2001, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulator Commission; ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the H. B. Robinson facility.

Since September 11, 2001, your staff has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to you and your staff. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Public Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Brian R. Bonser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket No.: 50-261
License No.: NPF-23

Enclosure: Inspection Report 50-261/01-04
w/Attachment

cc w\encl: (See page 3)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-261
License No:	NPF-23
Report No:	50-261/01-04
Licensee:	Carolina Power & Light (CP&L)
Facility:	H. B. Robinson Steam Electric Plant, Unit 2
Location:	3581 West Entrance Road Hartsville, SC 29550
Dates:	July 1, 2001 - September 29, 2001
Inspectors:	B. Desai, Senior Resident Inspector A. Hutto, Resident Inspector
Approved by:	B. Bonser, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000261-01-04, on 07/01 - 09/29/2001, Carolina Power & Light Company, H. B. Robinson Steam Electric Plant, Unit 2, Refueling and outage activities.

The inspection was conducted by resident inspectors. The inspectors identified one green finding which was dispositioned as a non-cited violation. The significance of most findings is indicated by their color (green, white, yellow, red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

Cornerstone: Initiating Events

- Green. A non-cited violation for failure to follow a maintenance procedure during a refueling outage as required by Technical Specification 5.0 was identified. This resulted in a component cooling water (CCW) system relief valve not reseating following a relief, causing a partial draindown of the CCW system.

  The safety significance was very low because of the options available to the operators to mitigate the consequences of the partial draindown to maintain decay heat removal.

B. Licensee Identified Violations

None.

Report Details

Summary of Plant Status

The unit operated at or near full power for the entire report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

The inspectors reviewed plant documents including plan-of-the-week, system descriptions (SD), Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS), and piping and instrument diagrams (P&IDs) to determine correct system lineup. The inspectors performed three partial system walkdowns to verify proper equipment alignment and to identify any discrepancies that could impact the safety function of the system or could contribute to an initiation of a plant transient.

Partial System walkdowns included:

- B Motor Driven Auxiliary Feedwater (AFW) Train and Steam Driven AFW Train with A Train out of service (OOS)
- A Safety Injection (SI) Train with B Train OOS
- A and B Emergency Diesel Generators (EDG) and E1 and E2 Buses with Dedicated Shutdown Diesel OOS

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

Within the areas identified below, the inspectors observed the following to determine whether any conditions adversely affected fire protection defense-in-depth features:

- transient combustible materials;
- any welding or cutting being performed in the area;
- the physical condition of the fire detection devices;
- the physical condition of the automatic suppression system (where used);
- the availability and general condition of portable fire extinguishers;
- the physical condition of manual suppression systems, including fire hoses;
- the material condition of electrical raceway fire barrier systems;

- the material condition of the fire doors;
- the condition of ventilation fire dampers;
- the physical condition of seals in accessible electrical and piping penetrations;
- the adequacy of compensatory measures, where degraded features were identified.

The inspected areas included the following:

- Battery Room - Cable Spread Room
- Rod Control Room
- Turbine Building & Main Steam Isolation Valve Area Area
- Control Room/ Hagan Room
- Charging Pump Room during hot work
- Spent Fuel Pool
- CCW Pump Room
- EDG A & B Rooms
- Auxiliary Building 2nd Floor Volume Control Tank Room
- Service Water Intake

b. Findings

No findings of significance were identified.

IR06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the licensee's maintenance procedures related to the auxiliary building sump tanks and floor drains as they apply to internal flooding detection. The inspectors reviewed preventative maintenance for sump tank level indication, tank cleaning and inspection, and strainer maintenance. The inspectors walked down the auxiliary building floor drains and inspected them for any accumulation of debris and evidence of blockage.

b. Findings

No findings of significance were identified.

IR07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed completed test procedures, open work orders, the licencee's maintenance rule data base, and TS to ensure that heat exchanger deficiencies that could mask or degrade performance were identified. Specifically, during this report period, the inspectors reviewed the status of the EDG lube oil coolers (heat exchanger cooled by service water) by partially walking down the system and reviewing the latest heat exchanger inspection data as documented in procedure CM-201, "Safety Related and Non-Safety Related Heat Exchanger Maintenance," Revision 28.

b. Findings

No Findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed licensed operator requalification training activities which included simulator scenarios. The training scenarios involved a steam generator tube leak and steam line break. The inspectors assessed licensed operator performance during the scenarios to verify that the crew correctly diagnosed abnormal conditions and that the appropriate emergency operating procedures (EOP) and abnormal operating procedures (AOP) were used. The inspectors observed the effectiveness of command and control demonstrated by the crew. The inspectors witnessed the post training critique to determine if the training objectives were met.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors assessed the effectiveness of the licensee's maintenance efforts by evaluating several conditions that occurred during the inspection period. The inspection determined the risk significance of the condition, licensee implementation of the maintenance rule (10 CFR 50.65) with respect to characterization of failures, the appropriateness of the associated a(1) or a(2) classification as well as the associated performance criteria, and the utilization of the corrective action program. The specific conditions evaluated by the inspectors included:

- Residual Heat Removal (RHR) system valve CC 748 valve position stop adjustment
- Broken bolt on breaker for HVH-1 (Containment Air Recirculation Cooling Unit Fan)
- C Deepwell pump motor - low megger reading
- Pressurizer low pressure relay PC-457D failure during reactor protection system testing
- Air start solenoid valve DA-23B failure during EDG B testing.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments for the following plant configurations. The inspectors reviewed the licensee's implementation of 10 CFR 50.65 (a)(4) requirements during scheduled and emergent maintenance activities. The licensee evaluated plant risk in accordance with Operations Management Manual OMM-048, "Work Coordination and Safety Assessment," Revision 11, during the scheduling of planned and emergent work items. The inspectors reviewed the effectiveness of licensee actions to plan and control scheduled work to minimize overall plant risk while the emergent work items were being addressed. The inspectors reviewed the applicable plant risk profiles, work week schedules, and maintenance work requests associated with the following out of service equipment:

- AFW and RHR Trains A and B for room fan data
- Emergent Charging Pump C valve replacement with AFW-V2-16C unavailable
- Intermittent Battery Charger A/A-1 DC Ground Alarm Troubleshooting
- EDG B Functional Failure

b. Findings

No findings of significance were identified.

1R14 Personnel Performance Related to Non-Routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed procedures, operator logs, plant computer data, and associated plant computer printouts to determine if operator response to a switchyard lightning strike event on September 20, that resulted in multiple equipment transients, was in accordance with the response required by the procedures and training.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors selected operability evaluations affecting the risk significant mitigating systems listed below to assess as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued component or system operability was warranted; and

(3) whether other existing degraded conditions were considered as compensatory measures. These reviews were performed for the following:

- Loss of Indication and Failure of Turbine Valves to Close upon Demand during Valve Testing
- Engineering Service Request (ESR) 01-00189, SI-869 Packing Leak Comparison
- Static Post Test Evaluation, GL 89-10 program, valves FW-V2-6A, FW-V2-6C

b. Findings

No findings of significance were identified.

1R16 Operator Work-arounds

a. Inspection Scope

The inspectors performed a cumulative review of existing operator work-arounds to determine any change from the previous inspection period. The review also considered the effect of the work-arounds on the operators ability to implement AOPs or EOPs. Additionally, the inspectors periodically reviewed Action Requests (ARs) and held discussions with operators to determine if any conditions existed that should have been identified by the licensee as operator work-arounds. Four existing work-arounds listed below were reviewed and discussed with several operators for their understanding of the work-arounds impact on the plant.

- Vent header must be pumped down. Waste gas compressors cannot be left in auto (97-008)
- Frequent monitoring of gland steam pressure and adjustments of GS-36 during power changes (00-003)
- Steam Generator Blowdown (SGBD) flash tank level control system does not work in automatic. This requires increased monitoring and manual adjustment of the SGBD System (01-003)
- Elevated Condensate Storage Tank (CST) oxygen levels when CST level is less than 75% requiring increased operator attention (01-005)

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors witnessed the following post maintenance tests (PMT) and/or reviewed the test data to determine if the tests were adequate for the scope of maintenance and if the acceptance criteria and test results demonstrated the operational readiness of the systems structures and components (SSCs) in accordance with plant TS. The activities

were selected based on a risk assessment associated with the scheduled or emergent activity.

- OST-201-1 "MDAFW System Component Test - Train A," Revision 16
- RST-011 "Calibration of Radiation Monitoring System Monitors R-12, R-20, and R-21," Revision 17
- OST-750-1 "Control Room Emergency Ventilation System - Train A (Monthly)," Revision 10
- OST-101-3 "CVCS Component Test Charging Pump C (Quarterly)," Revision 26
- OST-402-1 "EDG A Fuel Oil System Flow Test," Revision 14
- OST-401-2 "EDG B Slow Speed Start," Revision 15

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed the following surveillance tests and/or reviewed test data to verify that the surveillance test results demonstrated that the SSCs were capable of performing their intended safety functions. Specifically, the inspectors considered the following: pre-conditioning, plant risk, appropriate acceptance criteria, adequate test equipment, procedure adherence, completeness of data, adequate test frequency, and configuration control.

- OST-622 "Fire Suppression Water System Motor Driven Fire Pump Test," Revision 16
- MST-022 "Safeguard Relay Rack - Train A," Revision 16
- OST-401-2 "EDG B Slow Speed Start," Revision 15
- OST-910 "Dedicated Shutdown Diesel Generator (Monthly)," Revision 26
- OST-108-2 "Boric Acid Pump B Inservice Inspection (Quarterly)," Revision 13
- EST-003 "Incore/Excore Detector Calibration (Quarterly)," Revision 13
- OST-151-1 "Safety Injection System Components Test - Pump A (Quarterly)," Revision 16,

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed existing temporary modifications to determine their impact on safety functions. ESR 00-00117, Temporary Modification for Injecting Chilled Water to HVH - 1,2,3,4, involving temporary modifications to risk significant systems was reviewed, including the associated 10 CFR 50.59 screening against the system design basis, UFSAR and TS. The review included configuration control of the modification to verify that any affected plant documents, such as drawings and procedures were properly controlled.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed and evaluated the licensee's conduct of the emergency preparedness drill held on September 4, 2001. The drill scenario involved a faulty steam generator with other complications. The inspectors observed the scenarios to determine licensee opportunities for event classification, notification, and protective action recommendations, and the timeliness and accuracy associated with these activities. The inspectors observed the post drill critiques to verify the licensee's ability to assess drill performance. The inspectors also reviewed condition report AR 43155 "Simulator Radios" to verify status of corrective actions.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

40A1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors verified the following PIs for accuracy. To verify the PI data, the inspectors reviewed control room logs, maintenance rule logs, data reported to NRC, and condition reports. PI data for the period of April through June 2001 was reviewed using the guidance in Nuclear Energy Institute (NEI) 99-02 "Regulatory Assessment Performance Indicator Guideline," Revision 0.

Cornerstone	Performance Indicator
Mitigating Systems	Emergency AC Power System Unavailability, High Pressure Injection System Unavailability, Residual Heat Removal System Unavailability, and Heat Removal System Unavailability.
Emergency Preparedness	Drill/Exercise Performance

b. Findings

No findings of significance were identified.

4OA5 Other

(Closed) URI 50-261/01-03-02 : Component Cooling Water (CCW) Relief Valve Lift During Shutdown

(Green) The inspectors identified a violation of maintenance procedure CM-102, "Nozzle Relief Valve Maintenance," Revision 24, for failure to adequately set the CCW relief valve nozzle and guide ring. This resulted in the reseat pressure setpoint of relief valve CC-715 to be improperly set. This caused valve CC-715 to lift and stay open during a surveillance test on May 4, causing a partial draindown of the CCW system. The safety significance was very low because of the options available to the the operators to maintain decay heat removal due to the partial draindown of the CCW system.

As described in NRC Inspection Report 50-261/01-03 Section 1R20, this URI involved an event in which CCW relief valve CC-715 lifted resulting in a partial draindown of the CCW system. At the time of the event, the reactor coolant system (RCS) was in mode 5 with the RHR system in service for decay heat removal. The inspectors reviewed significant AR 31337 that was initiated by the licensee as a result of this event.

A phase III significance determination process evaluation was completed and concluded that the deficiency was of very low safety significance (Green). The Green safety significance conclusion is based on the fact that had the operators failed to recognize and remedy the loss of water from the CCW system before failure of the CCW pumps, several hours were available to diagnose and implement feed and bleed cooling using established procedures to mitigate core damage. There were multiple injection pumps (high head safety injection and charging pumps) available to feed cooling water into the RCS, coupled with power operated relief valves to provide bleed capability. This feed and bleed method could have provided core cooling for ten days. Within ten days, the refueling water storage tank could have been re-filled to allow continued feed and bleed cooling. Further, ten days was sufficient to replace a potentially damaged CCW pump to restore normal decay heat removal.

Technical Specification 5.4, "Procedures," section 5.4.1, requires that written procedures shall be established, implemented, and maintained covering activities recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. This includes

maintenance activities associated with the CCW system. The reported event represents licensee failure to adequately follow maintenance procedure CM-102 in that the nozzle and guide ring for valve CC-715 was set at positive 105 notches instead of the required negative 105 notches. This caused the valve to not reseat following a lift, on May 4, 2001 resulting in the partial draindown of the CCW system. This item is in the licensee's corrective action program as AR 31337 and has been designated as a Non-cited Violation (NCV) consistent with Section VI.A.1 of the Enforcement Policy. It is identified as NCV 50-261/01-04-01, Failure to Properly Set CCW Relief Valve.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. John Moyer and other members of licensee management on October 3, 2001. The licensee acknowledged the findings presented during the exit meeting.

The inspectors asked the licensee whether any of the material examined during the inspections should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

E. Kapopoulos , Operations Manager
C. Martin, Site Support Services Manager
S. Collins, Radiation Protection Superintendent
E. Caba, Engineering Superintendent
D. Stoddard, Robinson Engineering Support Services Manager
E. Rothe, Maintenance Manager
T. Walt, Director of Site Operations
R. Steele, Outage Management Manager
T. Cleary, Plant General Manager
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J. Fletcher, Regulatory Affairs Manager
S. Weiss, Training Manager
J. Moyer, Vice President, Robinson Nuclear Plant
S. Young, Superintendent Security
D. Crook, Supervisor Access Authorization

NRC

W. Rogers, Senior Reactor Analyst, Region II

ITEMS OPENED AND CLOSED

Opened

None

Closed

50-261/01-03-02	URI	CCW Relief Valve Lift During Shutdown (Section 4OA5).

Opened and Closed

50-261/01-04-01	NCV	CCW Relief Valve Lift During Shutdown (Section 4OA5).

List of Documents Reviewed:

1R04
USFSAR Sections 6.3, 8.3,10.4.8
TS Sections 3.5, 3.7, 3.8, 5.0
Plant Drawings G-190197, G-190199, G-190204, 5379-376, 5379-1082

1R05
USFSAR Section 9.5.1

1R06
W/O 61246-01 “A & B Sump Tanks Maintenance”
PM-ID-11936 “Calibration LT-1000A, Sump Tank A Level Instrument”
Plant Drawing 5379-920

1R07
USFSAR Sections 9.2,10.4.8
PLP-118, “Hot Weather Operations,” Revision 1
W/O 65248-03, “VT-2 Examination MDAFW Pump A Lube Oil HTX”

1R11
EPP-4, “Reactor Trip Response,” Revision 17
Emergency Procedure Path I

1R12
ADM-NGGC-0101, “Maintenance Rule Program,” Revision 13
PM-409, “Bridge Insulation Resistance Test of Electrical Equipment,” Revision 8
CP&L Motor Information Sheet, Request for Repair, B Deepwell Pump Motor
AR-44996, HVAC CV Air Recirculation Cooling Unit

1R13
OMM-48, “Work Condition and Risk Assessment,” Revision 11

1R15
AR 46378 SL Group EH Test Circuit Failure
OST-551, “Turbine Valve and Trip Functional Test (Quarterly During Power Operations),” Revision 32
TRM TR 4.4.1
Control Wiring Diagram B-190628, Governor Cabinet SH. 1

1R22
TS SR 3.3.2.2, 3.3.6.2, 3.3.6.7, 3.3.7.3, 3.4.15.4, 3.5.2.3, 3.7.4.2, 3.7.9.1

40A1
REG-NGGC-0009, “NRC Performance Indicators,” Revision 0