UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-8931

July 24, 2002

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 50-261/02-02

Dear Mr. Moyer:

On June 29, 2002, the Nuclear Regulatory Commission (NRC) completed an inspection at your Robinson facility. The enclosed report documents the inspection findings which were discussed on July 3, 2002, with Mr. Chris Burton 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.

No findings of significance were identified.

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 Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.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.: DPR-23

Enclosure: (See page 2)

Enclosure: Inspection Report 50-261/02-02
w/Attachment
cc w/encl:
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Director, Site Operations
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Plant General Manager
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-261
License No:	DRP-23
Report No:	50-261/02-02
Licensee:	Carolina Power & Light (CP&L)
Facility:	H. B. Robinson Steam Electric Plant, Unit 2
Location:	3581 West Entrance Road Hartsville, SC 29550
Dates:	March 31, 2002 - June 29, 2002
Inspectors:	B. Desai, Senior Resident Inspector A. Hutto, Resident Inspector M. Scott, Senior Reactor Inspector (Section 1R07.1)
Approved by:	B. Bonser, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000261-02-02, on 03/31/2002 - 06/29/2002, Carolina Power & Light Company, H. B. Robinson Steam Electric Plant, Unit 2. Baseline integrated resident inspection report.

The inspection was conducted by resident inspectors and a senior reactor inspector. No findings of significance were identified during this inspection. 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/ASSESS/index.html.

A. Inspector Identified Findings

None

B. Licensee Identified Violations

None

Report Details

Summary of Plant Status

The unit operated at or near full power for most of the report period with the following exceptions. On April 5, power was reduced to approximately 40 percent for turbine valve testing and reactor coolant pump bay entry. The unit was returned to 100 percent power on April 6. On May 17, power was reduced to approximately 60 percent for condenser tube repair. The unit was returned to 100 percent power on May 19.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and licensee procedure OMM-21, Operation During Adverse Weather Conditions, which is applicable for adverse weather conditions. This review was performed to assess licensee readiness for coping with severe weather conditions prior to the onset of the hurricane season. The inspectors also performed a plant walkdown with emphasis on significant components located outside the auxiliary and turbine buildings. These included the electrical transformers, the refueling water storage tank (RWST), the condensate storage tank (CST), diesel fuel oil storage tank, and the dedicated shutdown diesel generator (DSDG).

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors reviewed plant documents including plan-of-the-week, system descriptions (SD), 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.

The inspectors also performed one complete system walkdown. The added emphasis by the inspectors on the completed system walkdown included a review of the maintenance rule logs and review of the open maintenance work orders for the system.

Partial system walkdowns:

- Residual Heat Removal (RHR) train B with the A RHR train out-of-service (OOS) for motor replacement.
- A Train Service Water (SW) with B Train OOS for valve maintenance (V6-12C).
- A Emergency Diesel Generator (EDG)/Startup Transformer during B EDG outage.

Complete system walkdown:

- Auxiliary Feedwater System (AFW)

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:

- Safety Injection (SI) pump room
- A and B EDG rooms
- Auxiliary building hallway (1st Floor)
- E1 and E2 emergency bus room
- Charging pump room
- North and south cable vaults

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

.1 Biennial Review

a. Inspection Scope

The inspectors selected three types of risk important heat exchangers (HX) and critical systems' components to inspect. Items evaluated were: emergency core cooling systems' room coolers; control room heating ventilation and air conditioning (HVAC) units; containment coolers; SW pump performance; heat sink retaining dam; and the SW intake structure physical condition.

The inspectors reviewed to determine that: selected heat exchanger test methodology was consistent with accepted industry standards (Electric Power Research Institute Service Water Heat Exchanger Testing Guidelines, TR-107397) or equivalent (NRC Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment); test conditions were appropriately considered; test or inspection criteria were appropriate and met; test frequency was appropriate; as-found results were appropriately dispositioned such that the final condition was acceptable; and, test results considered test instrument inaccuracies and differences. The inspectors walked down: the SW intake structure, pumps, and piping; component cooling water HX rooms and system flow controlling valves; control room HVAC units; and the RHR flow control temporary equipment for Appendix R scenarios.

The inspectors reviewed: selected risk important valve histories and frequency of failures; HX inspection procedures and completed inspections; a 1998 video tape of a SW intake structure inspection; and preventive and corrective maintenance program work activities on selected components. These reviews were evaluated against inservice test inspection information, licensing commitments, TS, probabilistic risk assessments, UFSAR, and design documents.

The inspectors reviewed potential common cause problems associated with SW components and repair activities. The inspector reviewed the last heat sink dam inspection report. Major documents reviewed during the inspection are listed in the List of Documents Reviewed. During the inspection, two condition reports were issued to correct minor problems identified during the inspection.

b. Findings

No findings of significance were identified.

.2 Annual Review

a. Inspection Scope

The inspectors witnessed the cleaning and inspection of the B EDG SW HXs to verify that no deficiencies existed which could impair HX performance. The inspectors observed the as found condition of the HXs and checked for the presence of debris and sludge, and evidence of corrosion or microbiological growth that could result in fouling.

The inspectors also observed the condition of the internal coating applied to the water boxes for any degradation. The inspectors reviewed the "as found" inspection documentation performed by the system engineer for accuracy and completeness. Additionally, the inspectors assessed the results of the B EDG HX inspection to determine whether current inspection and cleaning frequencies were adequate to detect degradation prior to loss of the design basis heat removal function.

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 scenario observed involved a reactor coolant pump (RCP) seal failure. 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 and reviewed the emergency classification performed by the participating operators. The inspectors attended the post-scenario critique to verify that areas for improvement were being captured by the licensee's training program.

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 (MR) (10 CFR 50.65) with respect to characterization of failures, the appropriateness of the associated MR 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:

- RCP motor frame/pump vibration
- Heating and ventilation systems (auxiliary building, control room)
- RHR motor/shaft replacement
- B EDG wattmeter replacement
- B EDG 2-year maintenance outage (B EDG placed in a(1) status)
- SW flow control valve FCV-4701 failure resulting in control room water cooled condensing unit (WCCU)-1A trip

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 MR 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, 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:

- 6A room cooler (safety injection pump room) OOS due to water leak
- Electrohydraulic controls power supply failure with ongoing switchyard work (effect on turbine trip/transient)
- Switchyard work concurrent with DSDG maintenance
- B EDG shutdown during monthly surveillance due to kilowatt meter indication problems
- CCW pump C unavailable for maintenance with loop temperature channel emergent work

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

The inspectors observed operator performance and reviewed operator logs, plant computer data, and control room annunciator panels during a reactor power reduction to 40 percent to support turbine stop valve and governor valve testing. The inspectors observed the operators' procedure usage, command and control techniques, and adherence to TS reactor coolant sampling requirements.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors selected operability evaluations/engineering changes (ECs)/action requests (ARs) 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 for compensatory measures. These reviews were performed for the following:

- AR 59355, A RHR Stuffing Box Bushing Broken Tack Welds
- EC 48984 R0, B RHR Pump Non-EQ Splice
- AR 62410, B EDG Floating Bushing Less Than Required Tolerance
- AR 62421, Use of Cap Screws on EDG Fuel Injector Pumps

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 review. The review also considered the effect of the work-arounds on the operators ability to implement AOPs or EOPs. The inspectors periodically reviewed ARs and held discussions with operators to determine if any conditions existed that should have been identified by the licensee as operator work-arounds. Additionally, the inspectors reviewed the licensee's compensatory actions put in place as a result of the startup/auxiliary transformer deluge system being out of service due to a broken valve. The inspectors reviewed these actions to determine if the functional capability of the transformers or human reliability in responding to an initiating event was affected, and to evaluate the effect on operators' ability to implement AOPs or EOPs.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors performed a review of EC 49247 R0, Increase Float Voltage for A and B Station Batteries, to verify that the design bases, licensing bases, and performance capability of the affected risk significant structures, systems and components (SSCs) had not been degraded as a result of the modifications. The inspectors also verified that performing the modification would not place the plant in an unsafe condition.

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 SSCs in accordance with plant TS. The activities were selected based on a risk assessment associated with the scheduled or emergent activity.

- OST-910 Dedicated Shutdown Diesel Generator (Monthly) following synchroscope replacement
- OST-251-1 RHR Pump A and Components Test following motor replacement
- OST-201-2 MDAFW System Component Test - Train B following instrument calibration
- OST-252-1 RHR System Valve Test - Train A following valve maintenance
- OST-352-1 Containment Spray Component Test - Train A following valve maintenance and instrument calibration
- OST-202 Steam Driven Auxiliary Feedwater System Component Test following calibration and maintenance

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.

- EST-130 Testing CCW Surge Tank Vacuum Breaker
- OST-409-1 EDG A Fast Speed Start
- OST-101-2 CVCS Component Test Charging Pump B
- MST-903 Station Battery Charge
- OST-151-3 Safety Injection System Components Test - Pump C
- OST-202 Steam Driven Auxiliary Feedwater System Component Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications to determine their impact on safety functions. This review included the associated 10 CFR 50.59 screening performed for the modifications against the system design basis, UFSAR and TS as well as the configuration control of the modification to verify that any affected plant documents, such as drawings and procedures were properly controlled.

- EC 48911, HVH 6A Room Cooler Temporary Repair
- EC 49055 R0, Temporary Modification for EHC Power Supplies

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 a simulator based emergency preparedness drill held on April 30. The drill scenario involved an unisolable steam leak outside containment with subsequent reactor coolant system leakage greater than charging capability. The inspectors observed the scenario from the simulator control room, the technical support center, and the emergency operations center. The inspector's observed performance of the licensee's ability to correctly classify the event, notify state and county authorities, and to formulate the appropriate protective action recommendations. The inspectors also reviewed the post-drill critique that was developed by the licensee evaluators.

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 data for PIs under Mitigating Systems and Barrier Integrity, the inspectors reviewed control room logs, maintenance rule logs, system engineer leak rate data, data reported to the NRC, and condition reports. PI data for the period of January through March 2002 was reviewed using the guidance in Nuclear Energy Institute (NEI) 99-02 Regulatory Assessment Performance Indicator Guideline.

Cornerstone	Performance Indicator
Barrier Integrity	Reactor Coolant System Leakage
Mitigating Systems	Safety System Functional Failures

c. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Chris Burton and other members of licensee management on July 3, 2002. 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.

SUPPLEMENTARY INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Ivey , Operations Manager
C. Martin, Site Support Services Manager
E. Caba, Engineering Superintendent
D. Stoddard, Robinson Engineering Support Services Manager
E. Rothe, Maintenance Manager
C. Burton, Director of Site Operations
R. Steele, Outage Management Manager
T. Cleary, Plant General Manager
W. Farmer, Engineering Superintendent
J. Fletcher, Regulatory Affairs Manager
S. Weise, Training Manager
J. Moyer, Vice President, Robinson Nuclear Plant
S. Young, Superintendent Security
D. Crook, Supervisor Access Authorization
A.G. Cheatham, Radiation Protection Superintendent

NRC

Brian Bonser, Branch Chief, DRP, RII
F. Gillespie, Deputy Director, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation (NRR)
S.K. Mitra, License Renewal Project Manager, NRR

ITEMS OPENED, CLOSED, AND DISCUSSED

None.

LIST OF DOCUMENTS REVIEWED

1R04
UFSAR Sections 6.3, 8.3.1, 9.2.1, 10.4.8
ITS Sections 3.5, 3.7, 3.8, 5.0
Plant Drawings G-190197, G-190199, G-190204A, 5379-1484

1R05
UFSAR Section 9.5.1, 9.5.1A

1R07.1
Procedures and Completed Procedure (Testing Data):

CM-201, Safety-Related and Non-Safety Related Heat Exchanger [HVH–2] Maintenance, Attachment 8.6, data sheet completed April 17, 2001, Rev 25

CM-201, Safety-Related and Non-Safety Related Heat Exchanger [WCCU 1B] Maintenance, Attachment 8.6, data sheet completed August 22, 2000, Rev 24

CM-201, Safety-Related and Non-Safety Related Heat Exchanger [CCWHX A] Maintenance, Attachment 8.6, data sheet completed October 2, 2001, Rev 28

Service Water System, OP-903, Section 8.2.1.4, Record HVH Unit [1 to 4] flow, completed October 1, 2001, Rev 84

Special Procedure SP-1479, Service Water Pipe Replacement for the CCW HX Return Piping [modification post installation flow test], completed April 18, 2001, Rev 3

Service Water System Component Test Train “B” (Quarterly), OST-302-2, completed August 4, 2000, Rev 23

Condition Reports Generated:

59120 HVH-6, 7, and 8 Inspections were not Documented

59177 DSP-13 Temporary Flow Control Equipment Problems

Support Documents:

Design Basis Document Service Water System DBD/R87038/SD04, Rev 0

RHR Flow Control Valves Repair Procedure, DSP-13, Rev 5

Containment Vessel Inspection/Closeout, PLP-006, Rev 54

1R07.2
CM-201, Service Water Safety Related Heat Exchangers

1R11
EPP-4, Reactor Trip Response
Emergency Procedure Path I
Emergency Action Level Matrix

1R12
ADM-NGGC-0101, Maintenance Rule Program
Drawings G-190204A, HBR2-1971
ITS Sections 3.5.2, 3.8.1
RNP Maintenance Rule Database

1R13
OMM-48, Work Condition and Risk Assessment
OST-401-2, EDG B Slow Speed Start
OP-604, Diesel Generators A and B
NUMARC 93-01

1R14
GP-005, Power Operation
OP-105, Maneuvering the Plant When Greater Than 25% Power
TS SR 3.4.16.2

1R15
EGR NGGC-0005, Engineering Change
UFSAR Sections 3.11, 8.3, 15.0
Drawing G-190204
CM-303, Installation of Environmentally Qualified or Safety Related Taped Splices
USNRC ltr. dated March 19, 1985, SER for Final Resolution of Environmental Qualification of Electric Equipment Important to safety - H. B. Robinson

1R17
EGR- NGGC-0005, Engineering Change
UFSAR Section 8.3
MST-903, Station Battery Charge
CM-302, Charging (Individual or Group Cells) of the Station Batteries

1R19
PLP-033, Post Maintenance Testing (PMT) Program

IR22
ITS 3.5.2, 3.7.4, 3.8.1, 3.8.4, 5.5.8
H.B. Robinson Inservice Testing Database

40A1
REG-NGGC-0009, NRC Performance Indicators