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NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-8931

February 25, 2000

Carolina Power & Light Company
ATTN: Mr. Dale E. Young
Vice President
H. B. Robinson Steam Electric Plant
Unit 2
3581 West Entrance Road
Hartsville, SC 29550

SUBJECT: NRC INTEGRATED INSPECTION REPORT NO. 50-261/99-09

Dear Mr. Young:

This refers to the inspection conducted on December 19, 1999, through January 29, 2000, at the Robinson facility. The enclosed report presents the results of this inspection.

During the six weeks covered by this inspection period, our inspectors found that your staff generally took a safety conscious approach to the activities conducted at the Robinson plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document 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: NRC Integrated Inspection Report

cc w/encl:

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Enclosure

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-261
License No: DPR-23

Report No: 50-261/99-09

Licensee: Carolina Power & Light (CP&L)

Facility: H. B. Robinson Unit 2

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: December 19, 1999 - January 29, 2000

Inspectors: B. Desai, Senior Resident Inspector
A. Hutto, Resident Inspector
G. MacDonald, Senior Project Engineer (Sections
O1.1, O2.2)
F. Wright, Senior Radiation Specialist (Sections
R1.1, R1.2, R3.1, R7.1)

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

Enclosure

EXECUTIVE SUMMARY

H. B. Robinson Steam Electric Plant, Unit 2 NRC Inspection Report 50-261/99-09

This integrated inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6 week period of resident inspection; in addition, it includes the results of an inspection by a regional senior radiation specialist.

Operations

- The conduct of operations was risk-informed, professional, and safety-conscious (Section O1.1).
- The emergency diesel generators were appropriately configured and maintained. System parameters were being maintained within TS requirements (Section O2.1).
- Clearances associated with charging pump valve replacement and emergency diesel generator maintenance provided adequate isolation conditions for personnel safety and protection of plant equipment. The clearances were implemented in accordance with the licensee's procedures (Section O2.2).

Maintenance

- Maintenance activities were conducted in accordance with applicable work documents and procedures. Personnel were properly trained and knowledgeable of their assignments (Section M1.1).
- No problems were identified during observed surveillances. Completed surveillance test packages demonstrated acceptable test results (Section M2.1).

Engineering

- Completed engineering service request packages were reviewed and determined to meet procedural requirements (Section E1.1).

Plant Support

- The consistently low doses from the plant liquid and gaseous effluents, relative to regulatory limits, were indicative of overall good performance by the licensee's effluent control program. As priorities permitted, work orders and engineering modifications were planned to correct problems with liquid and gaseous systems (Section R1.1).
- The licensee was continuing to improve standards to keep collective dose and personnel contaminations to a minimum and maintain radiological exposures As Low As Reasonably Achievable (Section R1.2).

- Health Physics personnel demonstrated good awareness of plant radiological conditions and prescribed appropriate radiation protection controls for the radiological conditions (Section R1.2).
- The licensee was successful in reducing the volume of solid radioactive waste generated (Section 3.1).
- Reviewed radioactive material shipping documentation was found in compliance with applicable NRC and Department of Transportation requirements (Section 7.1).
- A vehicle search of a locomotive prior to entering the protected area was effectively performed by the licensee's security personnel in accordance with plant security procedures (Section S1.1).

Report Details

Summary of Plant Status

Robinson Unit 2 operated at or near 100 percent power throughout the inspection period with the following exception. On January 15, 2000, power was reduced to support turbine valve testing and to repack the A condensate pump. The unit was returned to full power on January 16, 2000, with no problems encountered. The transition to year 2000 was uneventful and all systems performed as designed during the transition.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors conducted frequent control room tours to verify proper staffing, operator attentiveness and communications, and adherence to approved procedures. The inspectors routinely attended operations turnover meetings, management review meetings, and plan-of-the-day meetings to maintain awareness of overall plant operations. Operator logs, Condition Reports (CR), and instrumentation were routinely reviewed. Plant tours were conducted to verify operational safety and compliance with Technical Specifications (TS), as well as to assess plant housekeeping. In general, the inspectors concluded that the conduct of operations was risk informed, professional, and safety-conscious. During a snowstorm the licensee met requirements for shift staffing and cold weather preparations. Proper notifications were made for a weather related loss of emergency response sirens.

O2 Operational Status of Facilities and Equipment

O2.1 Safety System Walkdown (71707)

The inspectors conducted a walkdown of the emergency diesel generators (EDGs) to assess the general condition of system components, including labeling, to verify that system components matched the system drawings and station operating procedures, and to assess plant housekeeping conditions within the EDG rooms. The material condition of the EDGs was found to be good and no housekeeping deficiencies were noted. The inspectors also conducted a walkdown of the cardox fire suppression system for the EDGs with the plant fire protection engineers. The inspectors found the system to be appropriately maintained and capable to perform its fire suppression function. The inspectors also reviewed the applicable sections of the Updated Final Safety Analysis Report (UFSAR) and TS, and identified no discrepancies. A review of the Maintenance Rule database was also performed and the inspectors found that the appropriate performance criteria data were being collected and trended. The inspectors concluded that the EDGs were appropriately configured and maintained, and system parameters were being maintained within TS requirements.

O2.2 Clearance Walkdown (71707, 62707)

The inspectors verified proper implementation of clearance 99-01322 during a walkdown on January 5, 2000. The clearance was to isolate the B charging pump to allow valve replacement maintenance. Clearance 99-02037 utilized to isolate the A emergency diesel generator for maintenance was also verified. The inspectors verified that valves, electrical breakers, and control switches were aligned appropriately to provide an adequate boundary for the scheduled maintenance activity. No discrepancies were identified during inspection of the clearances. The inspectors verified that the clearances were implemented in accordance with plant procedures.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Observation of Maintenance Activities (62707)

The inspectors observed all or portions of the following Work Request/Job Orders (WR/JOs):

- WR/JO ALAZ 005, Charging Pump B Valve Replacement.
- WR/JO ALCF 007, Repack B Charging Pump.
- PM-112, Grease inspection of motor operator for safety injection valve SI-880A.

The inspectors found that the maintenance observed was properly approved and was included in the plan of the day. The inspectors also found that the work was performed thoroughly, and with the work package present and in use. Accompanying documents such as procedures and supplemental work instructions were properly followed. Personnel were properly trained and knowledgeable of their assignments. The inspectors noted that supervisors and system engineers monitored the jobs on a frequent basis.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Surveillance Testing (61726)

The inspectors reviewed test package documentation and observed performance of all or portions of the following surveillance tests:

- OST 401-1, EDG A Slow Speed Start, Revision 10.
- OST 924-2, Process Radiation Monitors (Quarterly), Revision 9.
- OST 23, Monthly Surveillances, Revision 6.
- OST 201-2, MDAFW System component Test-Train B, Revision 10.

- OST 402-1, EDG A Diesel Fuel Oil System Flow Test, Revision 11.

III. Engineering

E1 Conduct of Engineering

E1.1 Review of Engineering Service Requests (37551)

The inspectors reviewed the following completed ESR packages and determined that the necessary 10 CFR 50.59 evaluations were performed in accordance with plant procedures. There were no discrepancies identified.

- ESR 99-00096, Radiation Monitor R-20 Spiking.
- ESR 99-00085, MCC -5, Provide Protection for SO Card.

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Radioactive Liquid and Gaseous Waste Systems (84750)

The inspectors reviewed the overall performance and capability of the Robinson liquid and gaseous radioactive waste treatment systems to determine whether the systems were being maintained and operated to keep radiological effluents As Low As Reasonably Achievable (ALARA). The inspectors reviewed the performance of radioactive waste systems with the assigned system engineers. The status of recent CRs, outstanding work orders, and design reviews were inspected.

The gaseous waste system was capable of maintaining effluents ALARA, the system operated effectively and overall system performance had improved in the last two years. The material condition of observed components was satisfactory. Overall, the liquid waste systems were working well.

The consistently low effluent doses from the plant liquid and gaseous effluents, relative to regulatory limits, were indicative of overall good performance by the licensee's effluent control program. As priorities permitted, work orders and engineering modifications were planned to correct problems with liquid and gaseous systems.

R1.2 Radiation Protection Activities

a. Inspection Scope (83750)

The inspectors reviewed the licensee's performance in meeting radiological protection goals and objectives in 1999.

b. Observations and Findings

A source that failed before the last refueling outage (RFO) resulted in increased radiation dose rates on primary systems and adversely effected the licensee's outage collective dose. The licensee had set an annual collective dose goal of 145 person-rem for the year and a person-rem goal of 100 for the RFO. The licensee achieved the annual goal with approximately 124 person-rem. The licensee's outage dose of 109 person-rem did not achieve the outage dose goal.

The licensee was also able to reduce the number of personnel contamination events in 1999 to 55. The 43 personnel contamination events during the refueling outage were the lowest in the site's history and well below the licensee's 1999 goal of 90 personal contaminations.

The inspectors observed radiation workers interfacing with the Health Physics (HP) staff. The inspectors found the HPs were knowledgeable of plant radiation conditions and required radiological protection measures. The inspector also attended a pre-job briefing for an entry into the containment building at power. There were several jobs planned during the entry. The HP technician that gave the briefing was knowledgeable of expected radiation levels where the radiation workers would be working and clearly established measures to control multiple entries in the containment building.

c. Conclusions

The licensee was continuing to improve standards to keep collective dose and personnel contaminations to a minimum and maintain radiological exposures As Low As Reasonably Achievable. Health physics personnel demonstrated good awareness of plant radiological conditions and prescribed appropriate radiation protection controls for the radiological conditions.

R3 RP&C Procedures and Documentation

R3.1 Solid Radioactive Waste and Transportation of Radioactive Materials (86750)

The inspectors reviewed the licensee's controls for solid radioactive waste to determine whether the licensee properly processed, stored, and shipped radioactive material. The licensee maintained a sorting process to recover clean materials from dry activated waste (DAW). The licensee was able to reduce DAW by surveying the contents of low radioactive waste containers and removing materials free of contamination. Remaining DAW was stored in a specific location to minimize doses. The licensee was also reducing liquid waste stream filter material.

The licensee established a refueling outage goal to limit the volume of solid radioactive waste generated to less than 100 cubic meters. The licensee achieved the goal with approximately 60 cubic meters of contaminated waste. The inspectors concluded that the licensee was successful in reducing the quantity of solid radioactive waste generated during the RFO.

The inspectors reviewed radioactive material shipping papers for compliance with applicable regulatory requirements and discussed those shipments with the radioactive

materials shipping supervisor. Radioactive material shipping documentation reviewed was found in compliance with applicable NRC and Department of Transportation requirements.

R7 Quality Assurance in RP&C Activities

R7.1 Radiation Protection Audits (40500, 83750, 84750, and 86750)

a. Inspection Scope

The inspectors reviewed 1999 Environmental and Radiation Control (E&RC) Assessment Reports to verify the licensee was self identifying and correcting program problems.

b. Observations and Findings

Approximately 60 assessments were documented in 1999. The scope of the reviews varied and included assessments of the radiation protection, chemistry, environmental and effluent monitoring programs. Program elements reviewed included evaluations of procedures, E&RC staff and radiation worker knowledge of radiation protection responsibilities, reviews of vendor performance, and individual worker evaluations. The licensee sent several E&RC personnel on bench-marking evaluations in 1999 at various facilities to gain insight and knowledge on specific technical issues related to the Robinson site activities. Those observations were also documented in the assessment program reports.

The E&RC staff routinely and systemically reviewed CRs related to their department through a process referred to as "condition roll up exercise" to search and identify adverse trends in staff performance and program implementations. The inspectors randomly selected CRs identified in the assessment reports to verify corrective actions were made.

c. Conclusions

The inspectors found that the licensee made good use of self evaluations to improve staff knowledge, make program improvements, and to verify site programs were being effectively implemented. Corrective actions for identified problems were being corrected. The E&RC self assessment performance was identified as a program strength.

S1 Conduct of Security and Safeguards Activities

S1.1 Locomotive Search (71750)

The inspectors observed the licensee's plant security guards perform a vehicle search of a locomotive prior to entry into the protected area. The locomotive was brought on site to test the rail lines in preparation for spent fuel shipments that are planned to be made later in the year. Four guards were utilized for the search. The inspectors noted

that guards maintained positive contact with the train engineer throughout the search. A copy of security procedure SP-008, "Vehicular Access Control," Revision 30, was maintained at the search site and the inspectors observed the guards' proper completion of Attachment 7.1, "Designated/Undesignated Vehicle Entry/Exit Checklist."

The inspectors found the search to be thorough as all accessible compartments were opened and inspected. A complete search of the cabin area was also performed. Two signal flares were discovered and confiscated until the locomotive left the site. The inspectors concluded that the vehicle search was effective and in accordance with the licensee's security procedures.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on February 4, 2000. The licensee acknowledged the findings presented at the exit meeting. Dissenting comments were not received from the licensee. The licensee did not identify any materials used during the inspection as proprietary information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Cleary, Operations Manager
 J. Clements, Site Support Services Manager
 S. Collins, Radiation Protection Superintendent
 R. Duncan, Robinson Engineering Support Services Manager
 J. Fletcher, Maintenance Manager
 J. Moyer, Director of Site Operations
 R. Steele, Outage Management Manager
 T. Walt, Plant General Manager
 R. Warden, Regulatory Affairs Manager
 A. Williams, Training Manager
 D. Young, Vice President, Robinson Nuclear Plant

NRC

B. Desai, Senior Resident Inspector
 A. Hutto, Resident Inspector

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 40500: Effectiveness of Licensee Process To Identify Resolve and Prevent Problems
IP 61726: Surveillance Observations
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 71750: Plant Support Activities.
IP 83750: Occupational Radiation Exposures
IP 84750: Radioactive Waste Treatment and Effluent and Environmental Monitoring
IP 86750: Solid Radioactive Waste Management and Transportation of Radioactive Materials

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None