



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

Report No.: 50-261/91-28

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: December 10, 1991 - January 13, 1992

Lead Inspector:

L. W. Garner
L. W. Garner, Senior Resident Inspector

1/17/92
Date Signed

Other Inspectors: M. D. Hunt, Reactor Engineer
K. R. Jury, Resident Inspector

Approved by:

H. O. Christensen
H. O. Christensen, Section Chief
Division of Reactor Projects

1/17/92
Date Signed

SUMMARY

Scope:

This routine, announced inspection was conducted in the areas of operational safety verification, surveillance observation, and maintenance observation.

Results:

There were no violations or deviations identified.

The routine involvement of system engineering in facilitating repair of malfunctioning control room instrumentation and related equipment was considered a good practice, paragraph 2.

REPORT DETAILS

1. Persons Contacted

- *C. Baucom, Senior Specialist, Regulatory Compliance
- *R. Beverage, Manager, Quality Control
- *W. Biggs, Manager, Nuclear Engineering Department Site Unit
- *R. Chambers, Plant General Manager, Robinson Nuclear Project
- T. Cleary, Manager - Balance of Plant Systems and Reactor Engineering, Technical Support
- D. Crook, Senior Specialist, Regulatory Compliance
- C. Dietz, Vice President, Robinson Nuclear Project
- R. Femal, Shift Supervisor, Operations
- *W. Gainey, Manager, Plant Support
- *J. Kloosterman, Manager, Regulatory Compliance
- D. Knight, Shift Supervisor, Operations
- A. McCauley, Manager - Electrical Systems, Technical Support
- R. Moore, Shift Supervisor, Operations
- *A. Padgett, Manager, Environmental and Radiation Control
- *M. Page, Manager, Technical Support
- *R. Prunty, Manager, Robinson Licensing
- D. Seagle, Shift Supervisor, Operations
- *R. Smith, Manager, Maintenance
- *V. Smith, Nuclear Assessment Department
- W. Stover, Shift Supervisor, Operations
- *A. Wallace, Manager, Operation Coordination
- D. Winters, Shift Supervisor, Operations

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

*Attended exit interview on January 14, 1992.

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, 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 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.

Plant Shutdown Initiated Due To Inoperable BATP

On December 24, 1991, at 9:57 a.m., a plant shutdown was initiated as required by TS 3.2.3.b. due to an inoperable BATP. TS 3.2.3.b. required the unit to be placed in hot shutdown condition utilizing normal operating procedures if a BATP is not restored to operable status within 24 hours. The unit was at 90 percent power when the shutdown commenced. After the BATP was replaced and successfully tested, the shutdown was terminated at 51 percent power and the TS action statement was exited at 3:59 p.m. The BATP was inoperable due to the pump's motor tripping on thermal overload during routine BAT mixing. Due to the unavailability of a spare motor and pump assembly, one had to be assembled from stock parts. This evolution was the primary reason for the expiration of the 24 hour allowable out-of-service time, which resulted in the initiation of the plant shutdown. Several ACRs were generated as a result of the pump tripping and problems encountered during subsequent troubleshooting and installation. The inspectors will monitor the associated corrective actions during routine ACR reviews.

Blue Dots Status

The Operations Unit utilizes round blue stickers (blue dots) in the control room to identify malfunctioning instrumentation and plant equipment. The number of blue dots is routinely tracked and associated items are reviewed by a system engineer. The routine involvement of system engineering in facilitating repair of equipment associated with blue dots continues to be a good practice. The inspectors reviewed the blue dot data base report dated January 2, 1992. The report listed 11 items currently available for work, 1 item on maintenance hold, 3 items on engineering hold, 3 items awaiting parts, 12 items available for work during a forced outage, and 6 items requiring a refueling outage to work. Even though maintenance has continuously worked the available items, the number of items has remained in the mid-thirties since early fall. The number of items was indicative of an older plant late in an operating cycle.

No violations or deviations were identified.

3. Monthly Surveillance Observation (61726, 92701)

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 procedures listed below, the inspectors determined that precautions and LCOs were adhered to, the required administrative approvals were obtained prior to test initiation, testing was accomplished by qualified personnel in accordance with an approved test procedure, the tests were completed at the required frequency, and that the tests conformed to TS requirements. Upon test completion, the inspectors verified that 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 activities:

OST-151	Safety Injection System Component Test
OST-401	Emergency Diesels (Slow Speed Start)
OST-101	Chemical and Volume Control System Component Test
OST-406	TSC/EOF/PAP Diesel Generator Test

EDG KVA Testing

Through the review of industry events and NRC Information Notice No. 91-13, Inadequate Testing Of Emergency Diesel Generators, the licensee identified that KVA loading capability was not being verified during EDG periodic testing. In response to a similar finding described in IR 91-21, the licensee indicated that applicable test procedures would be revised and EDG KVA loading at nameplate rating (3125 KVA) would be performed by December 9, 1991. On December 9, the inspectors observed testing of the A EDG in accordance with revised test procedure OST-401. Testing was performed at or slightly above 3125 KVA. However, during the test the E1 emergency bus voltage increased by approximately 35 volts to 520 volts. The increase in voltage, greater than expected, was attributed to transformer impedance between the emergency bus and the onsite EDS. Due to the magnitude of the voltage increase, KVA nameplate testing of the B EDG was not performed. Emergency bus E2 routinely operates at 15 to 20 volts higher than E1, thus a 35 volt voltage increase could result in unacceptably high voltage on E2. At the end of the report period, NED was reviewing the issue to determine how and under what plant conditions EDG KVA nameplate testing can be performed. The results of this review will be inspected as part of URI 91-21-09. Until this review is completed, EDG testing will be performed as it had been prior to the above mentioned revision.

B EDG Insulation Fire

On December 11, 1991, the inspectors observed B EDG monthly surveillance testing. During operation of the EDG, a small fire (lasting approximately 2 minutes before it was extinguished) occurred on the insulating material which surrounds the transition pipe from the exhaust manifold to the turbocharger inlet pipe. The EDG was shutdown and the fire was investigated by the Operations fire technician. The insulating material had absorbed a small quantity of lube oil from a nearby lube oil leak. Apparently, the lube oil was held next to the hot pipe for a sufficient time to allow combustion. The insulation was subsequently removed and the testing was successfully completed.

The insulating material involved had been recently installed to correct a fire hazard similar to that described above. The previous material had been a fire retardant fabric insulating type material which had also absorbed lube oil. This had caused a similar small fire on the A EDG in the same general area in October 1991. The insulation involved in the December 11 fire was a metallic covered fabric material which was impervious to lube oil. However, to attach the insulation around to the transition pipe, holes were punched in the material. These holes allowed lube oil to enter the insulating material under the metallic liner. Until a suitable insulating material can be procured, this section of exhaust piping will remain uninsulated.

No violations or deviations were identified.

4. 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, 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 and testing controls were adhered to. In particular, the inspectors observed/reviewed the following maintenance activities:

PIC-103	Electrical Indicators
WR/JO 92BUD031	Calibration of PZR PORV Relief Line Temperature Monitors

No violations or deviations were identified.

5. Exit Interview (30703)

The inspection scope and findings were summarized on January 14, 1992, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. 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.

10. List of Acronyms and Initialisms

a.m.	Ante Meridiem
ACR	Adverse Condition Report
BAT	Boric Acid Tank
BATP	Boric Acid Transfer Pump
EDG	Emergency Diesel Generator
EDS	Electrical Distribution System
EOF	Emergency Operating Facility
IR	Inspection Report
KVA	Kilovolts-amperes
LCO	Limiting Condition for Operation
NED	Nuclear Engineering Department
NRC	Nuclear Regulatory Commission
OST	Operations Surveillance Test
PAP	Primary Access Portal
p.m.	Post Meridiem
PIC	Process Instrument Calibration
PORV	Power Operated Relief Valve
PZR	Pressurizer
TS	Technical Specification
TSC	Technical Support Center
URI	Unresolved Item
WR/JO	Work Request/Job Order