



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

Report No.: 50-261/92-05

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: February 8, 1992, - March 13, 1992

Lead Inspector: *L. W. Garner* *3/24/92*
L. W. Garner, Senior Resident Inspector Date Signed

Other Inspectors: K. R. Jury, Resident Inspector
L. A. Keller, Resident Inspector

Approved by: *H. O. Christensen* *3/24/92*
H. O. Christensen, Section Chief Date Signed
Division of Reactor Projects

Summary

Scope:

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

Results:

A non-cited violation was identified involving failure to perform tamper switch surveillance in accordance with procedures (paragraph 3).

A turbine runback resulted when a rod control system supply breaker was inadvertently tripped during a breaker compartment inspection (paragraph 2).

REPORT DETAILS

1. Persons Contacted

- R. Barnett, Manager, Outages and Modifications
- *C. Baucom, Acting Manager, Regulatory Compliance
- *W. Biggs, Manager, Nuclear Engineering Department Site Unit
- R. Chambers, Plant General Manager
- 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
- *J. Eaddy, Manager, Environmental and Radiation Support
- R. Femal, Shift Supervisor, Operations
- D. Knight, Shift Supervisor, Operations
- *L. Lynch, Supervisor, Quality Control
- A. McCauley, Manager - Electrical Systems, Technical Support
- R. Moore, Shift Supervisor, Operations
- A. Padgett, Manager, Environmental and Radiation Control
- *M. Page, Manager, Technical Support
- D. Seagle, Shift Supervisor, Operations
- R. Smith, Manager, Maintenance
- *R. Wallace, Coordinator, Operations
- *L. Williams, Manager, Site Nuclear Security
- D. Winters, Shift Supervisor, Operations

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

*Attended exit interview on March 18, 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, 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 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.

Uncontrolled Security Key

On February 17, 1992, a security key was found on the first level of the turbine building. Because control of the key had not been maintained, all security lock cores were replaced. The key was determined to belong to the outside auxiliary operator's key ring. The security key was only one of approximately twenty keys on the ring. How and when the security key became separated from the ring could not be determined. The licensee has reviewed this event with shift personnel and has implemented additional controls to maintain accountability of security keys.

Turbine Runback

On March 12, 1992, the unit experienced a turbine runback from 100 to 97 percent power when supply power was momentarily interrupted to the rod control system. All plant systems responded as expected during the transient. The event occurred when an engineer performing a verification of breaker nameplate information, allowed the MCC compartment door/breaker latch interlock to trip the breaker when he closed the MCC compartment door. The engineer reclosed the breaker and reported the event to the control room. Prompt action to reclose the supply breaker limited the severity of the transient. However, restoration of the breaker to its normal position was the operating shift's responsibility. The engineer was counseled concerning his actions. ACR 92-058 was issued on March 12, 1992 to review this event. The inspectors will followup on this ACR as part of the routine inspection program.

New Fuel Receipt Inspection

The inspectors observed performance of FMP-013, Inspection Of New Fuel Assemblies And Shipping Containers. Fuel assembly W34 was found not to meet the rod to guide tube separation acceptance criteria between the third and fourth tie plates. The separation was determined to be 0.049 inches whereas the acceptance criteria was 0.060 inches minimum. Subsequent review revealed that the fuel assembly had been reworked during its manufacture. The fuel vendor determined that the fuel assembly would be acceptable to use. However, the licensee elected to return the

assembly to the fuel vendor for repair. The other new fuel assemblies met the procedure acceptance criteria. Discussion with a fuel vendor representative revealed that the inspection at the factory was a statistical based inspection and was not as comprehensive as the licensee's receipt inspection.

No violations or deviations were identified.

3. Monthly 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 procedures 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, the tests were completed at the required frequency, 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 activities:

MST-012	Maintenance And Testing Of Reactor Trip And Bypass Breakers
OST-401	Emergency Diesel(Slow Speed Start)
OST-551	Turbine Valve And Trip Functional Test

Tamper Switch Surveillance Not Performed

On February 25, 1992, during performance of PM-401, Security System Tamper And Line Supervision Test, a tamper switch failed to function properly. The tamper switch was found to have its lead attached with tape. The tamper switch was associated with a card reader which allows access into a vital area. During the review it was determined that the switch had not given an alarm since September 25, 1991. At that time a series of spurious alarms had been received from the tamper switch. Since this tamper switch is tested quarterly per PM-401, a review was conducted of the surveillance test completed in December 1991. The completed procedure indicated that the tamper switch had functioned satisfactorily. However, computer alarm records contained no record that an alarm had been received during the December 1991 test. Further review of this completed procedure revealed similar discrepancies for approximately 40 percent of the tamper switches. Review of the latest completed test, the one which was performed in February 1992, revealed no similar discrepancies. Selective reviews of other previously completed PM-401 procedures likewise revealed no additional discrepancies.

The December 1991 discrepancies was associated with one I & C technician. The technician indicated that he had transferred information from a messy field copy to an official record copy of the procedure. He indicated that the steps had been performed by other individuals and he was just transcribing the information using his initials. The other technicians involved in the test indicated that they had not signed a field copy. The Maintenance Manager indicated that the practice of transcribing information by an individual not directly involved in the evolution and then initialing the procedure step did not meet management expectations and was unacceptable. During a special meeting of the maintenance staff, management standards and expectations for the conduct of maintenance activities were reviewed by the Maintenance Manager. The technician involved in this problem has resigned. The failure during December 1991 to perform the surveillance test in accordance with procedure PM-401 was a violation. This violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation met the criteria specified in Section V.G. of the Enforcement Policy. This NCV is identified as: Failure To Perform Tamper Switch Testing In Accordance With PM-401, 92-05-01.

MST-012

The inspectors observed performance of MST-012, Maintenance And Testing Of Reactor Trip And Bypass Breakers. The maintenance included lubrication, contact cleaning and undervoltage device trip testing. All maintenance actions observed were adequate and the undervoltage trip device tested satisfactorily. However, the inspector noted weakness in step 35 of the procedure. This step directs the maintenance personnel to apply 125 VDC to energize the undervoltage trip device for testing, but does not specify which secondary terminals on the breaker to apply the voltage. There are twelve secondary terminals on the back of the breaker which were not numbered or labeled. The maintenance personnel determined the appropriate terminals by placing a temporary short circuit across the input and output wires of the undervoltage trip device and then measuring the resistance between the various secondary terminals. The electrical maintenance supervisor indicated that a procedure change would be submitted for this step.

RT Bypass Breaker UV Device Actuation Point Drift

On March 12, 1992 while performing MST-012, the B RT bypass breaker UV device was determined to actuate at 38.7 VDC, approximately 14 percent below the 44.9 VDC reference value. The three consecutive tests which were averaged to determine the actuation point yielded values of 39.2, 37.9 and 39.1 VDC. The UV device was replaced and the breaker test was satisfactorily completed. The device in its as found condition would have performed its safety function; however, the failure of the UV device to actuate within plus or minus 10 percent of its reference value (the value determined when the device was originally installed) indicated that degradation had occurred. The removed UV device will be returned to the vendor for analysis. The UV devices on the other three RT and bypass

breakers tested satisfactorily. The UV devices on all the RT and bypass breakers were scheduled to be replaced in the March 1992 RO. The licensee plans to review the PM frequency to determine if a replacement interval shorter than a three refueling cycle interval is warranted.

One NCV was 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, material, testing, and fire prevention controls were adhered to. In particular, the inspectors observed/reviewed the following maintenance activities:

PM-007	Emergency Diesel Generator Inspection Number 1 (quarterly)
WR/JO 92-ACGA1	Maintenance and Testing of Reactor Trip Bypass Breaker A (MST-012)
WR/JO 92-ACSN1	Troubleshooting and Repair of Reactor Protection

RPS Isolation Amplifier Failure

The inspectors observed troubleshooting and repair of the RPS C S/G steam pressure channel II isolation amplifier PM-495A. The C S/G channel pressure indicator, PI-495 was reading out of tolerance low, e. g., the reading was greater than 4 percent lower than the redundant two indicators, PI-494 and PI-496. Operations personnel tripped the bistables associated with the S/G steam pressure channel II as required by TS. Subsequent troubleshooting determined that the C S/G steam line pressure was normal and that the problem was with the Hagan input isolation amplifier PM-495A. This amplifier prevents a fault in the indication circuitry from affecting the protection channel. This fault would not have prevented the protection circuitry from performing its function. Several capacitors were replaced in the isolation amplifier. The channel was returned to service and the indication was then consistent with the other two channels.

No violations or deviations were identified.

5. Followup (92700, 92701, 92702)

(Open) LER 90-01, Loss of All Control Rod Position Indication. The cause of this event was the failure of the 120 volt AC circuit breaker which supplies the RPIS. The cause of failure for the circuit breaker was poor electrical contact between an input 12 AWG wire and breaker fastening clip due to the presence of a metal sliver on the threaded fastener of the wire fastening clip. The metal sliver prevented adequate mechanical engagement between the wire and connector which resulted in arcing, thermal degradation, and subsequent failure of the breaker. The breaker and receptacle were replaced. The licensee verified positive contact between the replacement input wire and fastening clip and has included inspection of this connections in their PM program. Additionally, this connection, as well as others within the RPIS, is now checked periodically by thermal imaging. The turbine runback which resulted from the breaker failure was a much greater power reduction than anticipated. As committed to in the subject LER, an investigation into the abnormal turbine runback was conducted. However, the investigation did not discover the cause of this problem. The licensee was still considering additional troubleshooting or special testing to determine possible abnormalities in the turbine runback circuitry. This item remains open pending any additional actions that will be taken to review the turbine runback circuitry.

No violations or deviations were identified.

6. Exit Interview (30703)

The inspection scope and findings were summarized on March 18, 1992, 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.

<u>Item Number</u>	<u>Description/Reference Paragraph</u>
92-05-01	NCV - Failure To Perform Tamper Switch Testing In Accordance With PM-401 (paragraph 3)

7. List of Acronyms and Initialisms

AC	Alternating Current
AWG	American Wire Gauge
ACR	Abnormal Condition Report
FMP	Fuel Management Procedure
I&C	Instrument & Control
LCO	Limiting Condition for Operation

LER	Licensee Event Report
MST	Maintenance Surveillance Test
NCV	Non-cited Violation
PI	Pressure Indicator
PM	Preventative Maintenance
RO	Refueling Outage
RPIS	Rod Positioning Indicating System
RPS	Reactor Protection System
RT	Reactor Trip
S/G	Steam Generator
TS	Technical Specification
UV	Undervoltage
VDC	Volts Direct Current
WR/JO	Work Request/Job Order