UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report No.: 50-261/94-28

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 Unit 2

Inspection Conducted: December 4, 1994 - January 2, 1995

Lead Inspector: Sally Starkos for 1-19-95
W. T. Orders, Senior Resident Inspector Date Signed

Other Inspector: Sally Starkos for 1-19-95
C. R. Ogle, Resident Inspector Date Signed

Approved by: 1/20/95
H. O. Christensen, Chief Date Signed
Reactor Projects Section 1A
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspection was conducted in the areas of operational safety verification, maintenance observation, plant safety review committee activities, and followup. The inspection effort included reviews of activities during non-regular work hours on November 28, 29, 30 and December 2, 11, 12, 14, 23 and 28, 1994.

Results:

Plant Operations:

One Violation was identified which involved operations personnel mispositioning two valves in the service water system.
An Unresolved Item was identified which dealt with the misalignment of two valves and a pump switch associated with the reactor coolant drain tank.
These items are of concern because they represent further examples of a configuration control issue.

Maintenance:

One Inspector Followup Item was identified to track the licensee's activities to enhance on-line maintenance scheduling.

A Non-cited Violation was identified concerning the use of non-Q oil in the control room ventilation system chillers.

Engineering:

An Unresolved Item was identified concerning the basis for steam and feedwater flow transmitter calibration values.

Plant Support:

A Non-cited Violation was identified concerning a security guard removing a radiological posting from an auxiliary building access door.
An Unresolved Item was identified regarding missing security fence attachment clamps.

REPORT DETAILS

1. PERSONS CONTACTED

Licensee Employees:

W. Brand, Supervisor, Environmental Radiation Control
M. Brown, Manager, Design Engineering
*A. Carley, Manager, Site Communications
*B. Clark, Manager, Maintenance
D. Crook, Licensing/Regulatory Compliance
C. Gray, Manager, Materials and Contract Services
D. Gudger, Licensing/Regulatory Programs
*M. Herrell, Manager, Training
*S. Hinnant, Vice President, Robinson Nuclear Project
P. Jenny, Manager, Emergency Preparedness
*K. Jury, Manager, Licensing/Regulatory Programs
J. Kozyra, Licensing/Regulatory Programs
R. Krich, Manager, Regulatory Affairs
*B. Meyer, Manager, Operations
*G. Miller, Manager, Robinson Engineering Support Section
*J. Moyer, Manager, Nuclear Assessment
D. Taylor, Plant Controller
G. Walters, Manager, Support Training
R. Wardern, Manager, Plant Support Nuclear Assessment Section
W. Whelan, Industrial Health and Safety Representative
*D. Whitehead, Manager, Plant Support Services
*T. Wilkerson, Manger, Environmental Control
*L. Williamson, Manager, Security
*L. Woods, Manager, Technical Support
*D. Young, Plant General Manager

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

NRC Personnel:

*W. Orders, Senior Resident Inspector
*C. Ogle, Resident Inspector

*Attended exit interview on January 4, 1995.

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. PLANT STATUS AND ACTIVITIES

a. Operating Status

The unit operated for the entire report period with no major operational perturbations.

3. OPERATIONS (71707)

The inspectors evaluated licensee activities to determine if the facility was being operated safely and in conformance with regulatory requirements. These activities were assessed through direct observation, facility tours, interviews and discussions with licensee personnel and management, evaluation of safety system status, and review of facility records.

The inspectors reviewed shift logs, operation's records, data sheets, instrument traces, and records of equipment malfunctions to assess equipment operability and compliance with TS. The inspectors evaluated the operating staff to determine if they were knowledgeable of plant conditions, responded properly to alarms, adhered to procedures and applicable administrative controls, were cognizant of in-progress surveillance and maintenance activities, and were aware of inoperable equipment status. The inspectors performed instrument channel checks, reviewed component status, and reviewed safety-related parameters to determine conformance with TS. Shift changes were routinely observed to determine that system status continuity was maintained and that proper control room staffing existed. Access to the control room was controlled in the main, and operations personnel carried out their assigned duties in an effective manner. Control room demeanor and communications were appropriate.

Routine plant tours were conducted to evaluate 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.

Service Water Valve Mispositionings

On December 15, 1994, during a routine tour of the auxiliary building, the inspectors noted that service water valves SW-260 and SW-271 were open. These valves are root isolation valves for pressure indicators PI-1619A (SW-271) and PI-1619B (SW-260) and are normally closed. Both valves have an attached label plate which states: "This valve is the Q boundary for this part of the system. It must remain closed unless attended by an operator. If you open it to read pressure, ensure you close it when done." The inspectors noted that no operator was present in the vicinity of the valves.

After confirming the inspectors' observation, the licensee shut the valves and initiated an ACR. The licensee subsequently advised the inspectors that the valves were mispositioned in conjunction with a clearance and test request restoration which had occurred earlier that day. The licensee estimated that the valves were discovered by the inspectors within an hour of their being mispositioned.

In response to this event, the inspectors reviewed the applicable local clearance and test request, the ACR, and the written statements of the four operators involved in preparing and removing the clearance. The

inspectors also reviewed the system drawing, Operating Procedure, OP-903, Service Water System, and Operations Management Procedure, OMM-005 Clearance and Test Request. The inspectors determined from this review that the valves were mispositioned as a result of incorrect restoration positions being specified in the clearance.

The erroneous open restoration positions were specified on the clearance by the preparer, a licensed SRO, based on his observation of pressure on PI-1619A and PI-1619B during a pre-clearance walkdown of the system. He interpreted this observation to mean that SW-260 and SW-271 were open and in fact, overrode the correct "closed" restoration positions which were generated by the computer during the clearance preparation. In his written statement, the operator acknowledged that he did not consult OP-903 to determine the correct restoration position. The erroneous valve positions were not detected by the SRO who second checked the clearance. The SRO's statement reflected his reliance on his knowledge and experience as his basis for determining that "open" was the proper restoration position. While the valves were being restored to the post-clearance position, neither the AO nor SRO second-checker noted the label plates attached to the valves which would have advised them of the proper positions for the valves.

The failure to properly establish the local clearance and test request is a violation of TS 6.5.1.1. This is identified as a violation, VIO 94-28-01: Valves Mispositioned Due To Clearance Preparation Error.

Mispositioned Waste Disposal System Components

On December 28, 1994, the inspectors were advised that three waste disposal system components were not properly positioned during restoration from a clearance for maintenance. This condition was identified by the Manager of Shift Operations during a facility tour.

The specific components involved were WD-1721 and WD-1722, which are RCDT Pump Discharge Line Auto Isolation Valves, and the RCDT Pump A control switch. Valves WD-1721 and WD-1722 were found shut with their control switch in auto. The correct lineup per the operating procedure is for the valves to be open with the control switch in auto. The RCDT Pump A switch was discovered in the "OFF" position instead of the required "Auto" position.

The components were restored to their proper position and an ACR was generated. Pending a more detailed review of this event by the inspectors, it will be tracked as an Unresolved Item, URI 94-28-02: Mispositioned Waste Disposal System Components.

One violation was identified. Except as noted above, the area/program was adequately implemented.

4. MAINTENANCE

a. 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, radiological, and fire prevention controls were adhered to. In particular, the inspectors observed/reviewed the following maintenance activities detailed below:

WR/JO 94-BTI522	Calibrate The CVCS Holdup Tank And The Header Pressure Instrumentation (PIC -162 & 163 only)
WR/JO 94-ARBC1	Replace TE-3006 With New Calibrated RTD

Temporary Instruction 2515/125 Foreign Material Exclusion Controls

The inspectors evaluated the licensees foreign material control program. As part of this effort, the inspectors reviewed a listing of approximately 1900 ACRs generated since January 1994. Six of these ACRs dealt with deficiencies in the control of foreign material or implementation of the licensee's foreign material control program. A review of these ACRs indicated that the documented deficiencies were relatively minor. Furthermore, none of the items resulted in an observed degradation in safety system performance.

The inspectors reviewed licensee procedures related to foreign material exclusion control. Plant Program Procedure, PLP-047, Foreign Material Exclusion Area Program provides FMEA control for key areas such as the reactor cavity, spent fuel pit, head storage area, and other areas on as needed basis, as determined by licensee management. The inspectors observed that this procedure specifies detailed requirements for FMEA control.

Plant Program Procedure, PLP-006, Containment Vessel Inspection/Closeout is implemented to prepare the containment for power operations. This procedure specifically requires a check for loose plastic and herculite coverings. Items such as shoe covers, gloves, and cloth articles used for radiological control, are also specifically discussed in PLP-006. Though step-off pads are not identified in PLP-006, discussion with health physics personnel indicate that they are removed prior to final containment vessel closeout.

General foreign material exclusion controls for maintenance are delineated in Maintenance Management Procedure, MMM-001. More detailed requirements are specified in MMM-010, Cleanliness and Flushing Requirements. MMM-001 specifies general component cleanliness requirements in accordance with MMM-010. The Work Practice/Standards Checklist contained in MMM-001 also requires proper debris intrusion control measures. Additionally, MMM-001 requires QC holdpoints for cleanliness inspections prior to closing key fluid systems. This applies to four-inch and larger pipes in systems such as RCS, ECCS, steam generator, CCW, main steam, feedwater, and AFW. The inspectors reviewed corrective Maintenance Procedures, CM-003, RHR Pump and Motor Overhaul and CM-007, Motor Driven Auxiliary Feedwater Pump Overhaul. Both these procedures contained steps which would prevent the type of debris intrusion problems noted in Temporary Instruction 2515/125.

The inspectors were unable to observe maintenance activities during the performance of Temporary Instruction 2515/125, which would have afforded an appropriate review of the licensee's foreign material control practices. However, foreign material control practices have been observed during inspections of routine maintenance. Generally, licensee performance in this area has been adequate. Inspection reports 50-261/94-03 and 94-26 provide specific examples of inspector observations in this area.

Overall, the inspectors concluded that the licensee's procedures provide adequate guidance for control of foreign material. The applicability of the procedures is sufficient to prevent the problems identified in the temporary instruction. A review of the licensee's ACR database as well as inspector observations of maintenance indicate that licensee efforts at foreign material exclusion control are adequate.

Temporary Instruction 2515/125 is closed.

Temporary Instruction 2515/126, Evaluation of On-line Maintenance

The inspectors reviewed several aspects of the licensee's program for scheduling on-line maintenance. This program is governed by plant procedure PLO-056, Work Control Process, although other procedures, such as MMM-040, Fix It Now Team describe how and when maintenance activities can be performed on plant equipment.

The work management process incorporates a rolling 12-week schedule upon which work is planned. The inspectors noted that although the plant systems are assigned a specific week in the 12-week schedule, the current scheduling process does not plan maintenance in train specific (i.e., A or B) blocks. As such, Robinson may not be as vulnerable to the increased risk associated with the cumulative effect of having multiple systems within the same train out of service simultaneously.

The TI referenced three factors which could be considered by licensees in their evaluation of risks associated with removing non-safety or safety-related equipment from service. These include the probability of an initiating event, such as a LOCA turbine trip, or LOSP; the probability of being able to mitigate the event using core damage prevention as a measure of success; or the probability of being able to mitigate the event using containment integrity preservation as a measure of success. These factors were not formally considered by the licensee's process for scheduling on-line work. Rather, the licensee relies extensively upon operator review of the planned work to determine if plant safety would be affected.

The licensee has very recently (December 1994) developed a "Matrix of Risk-Significant Combinations". This matrix lists various plant systems along both axes and cross-references one to another to determine if the two systems can be removed from service simultaneously. The matrix is limited to one-to-one system comparisons and does not consider the combination of taking three or more systems out simultaneously. The matrix was developed by personnel involved in developing the plant PRA and was backed by a qualitative analysis of those systems which are contributors to the same accident sequences in the PRA. A quantitative analysis of the calculated increase in risk associated with simultaneously removing two or more of the systems from service was not considered in developing this matrix. The matrix has not been incorporated into any plant procedures. The licensee indicated plans to incorporate this matrix or a variation of it into the work control process both during scheduling, and the work control center.

The inspector concluded that the program does not currently require formal evaluations of increased risk due to on-line maintenance. The inspectors will follow the licensee's progress in integrating risk assessment techniques into scheduling on-line maintenance.

Inspector Followup Item 94-28-03: Follow The Licensee's Activities To Enhance The On-line Maintenance Scheduling Process.

Temporary Instruction 2515/126 is closed.

b. Followup - Maintenance (92902)

Use Of Unqualified Oil In WCCU

URI 94-27-03, documents the inspectors' observation that non-Q oil had been used in WCCU-1A. Further licensee review confirmed this observation and determined that the oil in WCCU-1B was also non-Q. This resulted in both WCCUs being inoperable. The licensee returned the WCCUs to service approximately seven hours later when the oil, Texaco Capella Oil Premium 68 was dedicated as safety

related. This dedication was based on Material Evaluation Number 519.01 and included chemical analysis of selected attributes of the oil. The licensee also generated an ACR on this issue.

In response to this issue, the inspectors reviewed the material evaluation, chemistry laboratory sample reports, and the ACR. Additionally, the inspectors reviewed licensee procedures for control of Q-list equipment and their consumables.

This review revealed that the installation of the non-Q oil in the WCCUs was inappropriate. Technical Support Management Manual, TMM-018, Q-List Consumables Procedure specifies the lubricating oils which can be used in safety-related plant equipment. Texaco Capella Oil Premium 68 is not specified in this procedure. Hence, its installation in the WCCUs was not permitted by TMM-018.

The licensee's ACR evaluation concluded that the use of the non-Q oil was a carryover from the modification package which installed the WCCUs. The inspectors were advised that the refrigerant compressor oil obtained coincident with the installation of the modification was procured non-Q. This practice was continued until questioned by the inspectors. The ACR also stated that the issue of non-Q oil in the WCCUs had been previously raised by plant personnel in the mid-1992 timeframe. However, based on specification of the oil as non-Q in the modification, the practice was not discontinued.

Based on the satisfactory dedication of the oil, the inspectors concluded that the safety significance of this practice was minimal. The inspectors were advised that a licensee review indicated only one other instance of non-Q oil being used in a Q-list WR/JO. This instance involved non-Q oil being used in fire hydrants. The licensee stated that this would not adversely impact the performance of the hydrants.

Additional corrective actions planned by the licensee include: adding Texaco Capella Oil Premium 68 to TMM-018, adding a precaution to the plant lubrication manual to specify that lubricants used in Q-list equipment be listed in TMM-018, and a review of the ACR with appropriate personnel.

Overall, the inspectors concluded that the installation of the non-Q oil in WCCU 1A and 1B was a violation of the requirements of TMM-018. However, this NRC identified violation is not being cited because criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied. This item is identified as a non-cited violation, NCV 94-28-04: Non-Q Oil Used In WCCUs. URI 94-27-03 is closed.

One non-cited violation was identified. Except as noted above, the area/program was adequately implemented.

5. ENGINEERING

a. Onsite Engineering (37551)

Main Steam and Feedwater Flow Transmitter Calibrations

On approximately December 15, 1994, the inspectors questioned licensee management on the basis of the numerical values used in the calibration of the steam and feedwater flow transmitters. These Rosemount transmitters provide signals to the reactor protection and the engineered safety features systems. The inspectors noted that the values for calibration of all six steam flow transmitters were identical. Furthermore, despite different characteristics for each feedwater flow nozzle and for each different nozzle tap connections, only two different sets of values were used for the calibration of the six feedwater flow transmitters.

Pending licensee identification of the basis of these numerical values and subsequent inspector review, this is identified as an Unresolved Item URI 94-28-05: Basis For Steam And Feedwater Flow Transmitter Calibration Values.

No violations or deviations were identified. The area/program was adequately implemented.

6. PLANT SUPPORT

a. Plant Support Activities (71750)

Security Guard Removes Radiological Posting

At 9:30 a.m. on December 5, 1994, during a routine tour of the facility, the inspectors observed that the radiological posting on Security Door 31 was missing. This door is on the east end of the RCA tunnel and is the normal entrance to the auxiliary building. The door is normally posted "Radiation Area" and "Radioactive Material Area." A security guard at the door informed the inspectors that he had just removed the sign, without the knowledge of health physics personnel, in preparation for painting the door.

The inspectors entered the auxiliary building and confirmed with health physics personnel that the sign had been removed without their consent. When the inspector and a health physics technician returned to the door a short time later, the posting had been restored. The licensee initiated an ACR to address the event.

In response to this issue, the inspectors reviewed the ACR, including the written statement of the guard who removed the posting. The inspectors also reviewed applicable plant procedures and GET lesson plan material related to radiological postings.

Overall, the inspectors concluded that the removal of the posting was the result of a non-cognitive error on the part of the security guard. Further, its removal was of minimal safety significance since the posting is redundant to those at the entrance to the RCA. However, Health Physics Procedure, HPP-001, Radiation Control Area Surveillance Program, assigns responsibility for the posting of room or areas to radiation control technicians. Additionally, GET lesson plans reviewed by the inspector indicated that personnel are instructed that tampering with radiological postings is prohibited. Since the guard was not a qualified radiation control technician, his action to remove the posting, thereby, down-posting the area, represented a violation of HPP-001.

The corrective action identified by the licensee in the ACR included disciplinary action against the responsible individual and a review of the event with other members of the security force. The licensee stated that the prohibition on moving radiological postings by non-health physics personnel was clearly understood by the members of the security force.

This NRC identified violation is not being cited because criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied. This event is identified as a non-cited violation, NCV 94-28-06: Security Guard Removed Radiological Posting.

b. Followup - Plant Support (92904)

Missing Security Fence Clamps

While conducting a protected area fence walkdown on December 23, 1994, the inspectors questioned a deficiency tag hanging on the fence in the vicinity of Gate 8. This tag, dated December 21, 1994, identified the fact that some tie down clamps used to piece the security fence together were missing. The security guards accompanying the inspectors were able to pull the 2 sections of security fence in this vicinity apart. The inspectors were concerned that the resulting opening was large enough to permit access.

In response to this observation, the licensee posted a watchperson at the gate as a compensatory measure. The fence was repaired later that day. The inspectors were also advised that the event was logged in the Safeguards Event Log on December 23, 1994. The inspectors did not observe any missing clamps at other locations on the security fence which would allow a similar degradation in the security fence.

Pending review of this issue by Region II security personnel, this issue will be tracked as an Unresolved Item, URI 94-28-07: Potential Impact Of Missing Security Fence Clamps.

One non-cited violation was identified. Except as noted above, the area/program was adequately implemented.

7. EXIT INTERVIEW

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on January 4, 1995. During this meeting, the inspectors summarized the scope and findings of the inspection as they are detailed in this report. The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. No dissenting comments from the licensee were received.

Item Number	Status	Description/Reference Paragraph
VIO 94-28-01	Open	Valves Mispositioned Due To Clearance Preparation Error
URI 94-28-02	Open	Mispositioned Waste Disposal System Components
IFI 94-28-03	Open	Follow The Licensee's Activities To Enhance The On-line Maintenance Scheduling Process
NCV 94-28-04	Open	Non-Q Oil Used In WCCUs
URI 94-28-05	Open	Basis For Steam And Feedwater Flow Transmitter Calibration Values
NCV 94-28-06	Open	Security Guard Removed Radiological Posting
URI 94-28-07	Open	Potential Impact Of Missing Security Fence Clamps
URI 94-27-03	Closed	WCCU Oil Procurement Practices
TI2515/125	Closed	Foreign Material Exclusion Controls
TI2515/126	Closed	Evaluation Of On-Line Maintenance

8. ACRONYMS AND INITIALISMS

ACR	Adverse Condition Report
AFW	Auxiliary Feedwater
AO	Auxiliary Operator
CCW	Component Cooling Water
CM	Corrective Maintenance
FMEA	Foreign Material Exclusion Area
GET	General Employee Training
LOCA	Loss Of Coolant Accident
LOSP	Loss Of Offsite Power
MMM	Maintenance Management Manual
OMM	Operations Management Manual
OP	Operations Procedure
PI	Pressure Indicator
PLP	Plant Program
PRA	Probabilistic Risk Assessment
QC	Quality Control
RCDT	Reactor Coolant Drain Tank
RCS	Reactor Coolant System
RHR	Residual Heat Removal
SW	Service Water
TS	Technical Specification
URI	Unresolved Item
WCCU	Water Cooled Condensing Unit