

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

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

Report No: 50-261/98-06

Licensee: Carolina Power & Light (CP&L)

Facility: H. B. Robinson Unit 2

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: May 10 - June 20, 1998

Inspectors: B. Desai, Senior Resident Inspector
A. Hutto, Resident Inspector
G. MacDonald, Region II Project Engineer

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Reactor Projects Branch 4
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Enclosure

EXECUTIVE SUMMARY

H. B. Robinson Power Plant, Unit 2
NRC Integrated Inspection Report 50-261/98-06

This integrated inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a six-week period of resident inspection; in addition, it includes the results of inspections by a regional project engineer.

Operations

- The conduct of operations was professional, risk informed, and safety-conscious (Section 01.1).
- A Non-Cited Violation (NCV) related to failure to appropriately log the Motor Driven Auxiliary Feedwater (MDAFW) pump inoperable and enter the appropriate Technical Specification (TS) action statement was identified (Section 02.1).
- Nuclear Assessment Section (NAS) and Plant Nuclear Safety Committee continued to provide strong oversight (Section 07.1).

Maintenance

- Maintenance and surveillance activities were performed satisfactorily. The inspector noted good controls of housekeeping and good supervisor oversight of work activities (Section M1.1).
- A NCV for failure to install fuse clips and blown fuse indicator for the control rod power supplies was identified. The failure was caused by an inadequate procedure. Safety significance of the condition was determined to be minor (Section M3.1).
- The inspector concluded that semi-annual maintenance was satisfactorily accomplished for the "B" Emergency Diesel Generator (EDG). Several material and component problems were encountered during the maintenance and post maintenance testing. Resolution of these problems was accomplished expeditiously and appropriately through good coordination between maintenance, engineering and operations personnel. The inspector identified a procedural weakness with regard to the disposition of test equipment during OST-409-2. The procedure did not require that the chart recorder used for capturing surveillance acceptance criteria be checked for proper set-up and programming. As a result, OST-409-2 was re-performed, extending the unavailability time for the "B" EDG. The "B" EDG was returned to operability within the required time allowed by TS (Section M3.2).
- The inspector concluded that the performance of OST-302-2 was satisfactorily accomplished. Coordination of the test was good. The licensee's response to out of specification conditions was appropriate, including the entering of the required action statements. Sound engineering judgment was used to correct the out of specification

conditions, and the implementation of the remedies was performed in a timely manner (Section M2.1).

Engineering

- The inspector concluded that the NAS assessment was thorough, which resulted in the identification of several deficiencies. The safety significance of the inadequate Net Positive Suction Head (NPSH) for the charging pumps under certain conditions was minor as they are not relied upon during accident mitigation. However, the deficiency highlighted weaknesses in the design control process. Specifically, the responsible engineer as well as the reviewers had failed to recognize the impact on the charging pumps during the ongoing efforts to address the Safety Injection (SI) NPSH issues following the Architect/Engineer inspection (Section E4.1).
- A NCV for failure to maintain operable inside containment purge valves when the open travel limits were found set greater than 70 degrees in violation of TS 3.6.3 was identified. Licensee Event Report 98-01-01 issued for this event was closed (Section E8.7).

Plant Support

- The inspectors concluded that radiation control and security practices were proper and post drill Emergency Preparedness critiques provided positive feedback to the players (Sections R1.1, S1.1, P8.1, P8.2).

Report Details

Summary of Plant Status

Robinson Unit 2 operated at full power for the entire report period.

I. Operations

01 Conduct of Operations

01.1 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 attended daily operation turnovers, management reviews, and plan-of-the-day meetings to maintain awareness of overall plant operations. Operator logs were reviewed to verify operational safety and compliance with Technical Specifications (TS). Instrumentation, computer indications, and safety system lineups were periodically reviewed from the Control Room to assess operability. Frequent plant tours were conducted to observe equipment status and housekeeping. Condition Reports (CRs) were routinely reviewed to assure that potential safety concerns and equipment problems were reported and resolved. Good plant equipment material conditions and housekeeping continued to be observed throughout the report period. In general, the conduct of operations was risk informed, professional and safety-conscious.

02 Operational Status of Facilities and Equipment

02.1 Failure to Declare Motor Driven Auxiliary Feedwater (MDAFW) Pumps out-of-service (71707) (92901)

a. Inspection Scope

The inspector reviewed circumstances related to the failure to declare the "B" MDAFW pump out-of-service during performance of Operations Surveillance Test (OST) 409-2 Emergency Diesel Generator (EDG) "B" Fast Speed Start on June 2, 1998. This issue was identified by the licensee during a routine review of shift supervisor logs.

b. Observations and Findings

Performing EDG surveillances with the EDG output breaker closed, renders the associated trains' MDAFW pump inoperable. The associated MDAFW pump is inhibited from automatically starting on low/low steam generator (S/G) level signal when the EDG output breaker is closed to prevent overloading the EDG. With the MDAFW inoperable, the unit is placed in a seven day TS action statement per TS 3.7.4 A and this TS action statement is required to be logged per Operations Management Manual, OMM-001, Logkeeping.

The inspector had identified this issue and communicated to the licensee in January 1998. As a result of inspector comments, the licensee had

initiated CR 98-00155, and as corrective action, revised EDG Surveillance Procedures OST-401-1 and OST-401-2. These procedures specifically prescribe that the operator appropriately declare the associated MDAFW pump inoperable in accordance with TS 3.7.4, during the conduct of the EDG surveillance. The licensee has scheduled but, not yet updated other EDG surveillance procedures, specifically, OST-409-1, and OST-409-2, as well as EDG Operations Procedure OP-604. During the performance of OST-409-2 on June 2, 1998, the licensee did not declare the "B" MDAFW pump inoperable during the period when the "B" EDG was running with the output breaker closed. Failure to appropriately log the MDAFW pump inoperable as required by OMM-001, Logkeeping, is considered a violation. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII:B.1 of the Enforcement Policy. The issue will be tracked as NCV 50-261/98-06-01, Failure to Log TS Action Statement.

As immediate corrective action, Night Order 98-11 was issued to remind the operations shift staff of the need to appropriately enter TS action statements. The night order is effective until procedures OST-409-1, OST-409-2 and OP-604 are adequately revised.

c. Conclusions

A NCV related to a failure to appropriately log the MDAFW pump inoperable and enter the appropriate TS action statement was identified.

07 Quality Assurance In Operations

07.1 Plant Nuclear Safety Committee and Nuclear Assessment Section Oversight

a. Inspection Scope (40500)

The inspector evaluated certain activities of the Plant Nuclear Safety Committee (PNSC) and Nuclear Assessment Section (NAS) to determine whether the onsite review functions were conducted in accordance with TS and other regulatory requirements.

b. Observations and Findings

The inspector periodically attended PNSC meetings during the report period. The presentations were thorough and the presenters readily responded to all questions. The committee members asked probing questions and were well prepared. The committee members displayed understanding of the issues and potential risks. Further, the inspector reviewed NAS audits and concluded that they were appropriately focused to identify and enhance safety.

c. Conclusions

The inspector concluded that the onsite review functions of the PNSC were conducted in accordance with TS. The PNSC meetings attended by the

inspector were well coordinated and meetings topics were thoroughly discussed and evaluated.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments (62707) (61726)

The inspector reviewed/observed all or portions of the following maintenance related work requests/job orders (WRs/JOs) and/or surveillances and reviewed the associated documentation:

- OST 409-2, PM-007, EDG Semiannual Preventive Maintenance and Surveillance
- WR/JO AAKY1 R-37 Troubleshooting
- OST 924-2, Process Monitor, Quarterly
- OST 626, Function Test of CO2 System, Annual
- PM-207, WR/JO AHXR001, MMM-42 Thermal Overload Testing of SI 867B
- OST-302-2, Service Water System Component Test

Maintenance and surveillance activities were performed satisfactorily. The inspector noted good controls of housekeeping and good supervisor oversight of work activities.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Inspection of OST-302-2, Service Water System Component Test Train "B" (Quarterly) (61726)

a. Inspection Scope

The inspector observed portions of Operations Surveillance Test, OST-302-2, Service Water System Component Test Train "B" (quarterly).

b. Observations and Findings

OST-302-2 is performed to verify mechanical performance and, assess operational readiness of service water (SW) system train "B" components to fulfill their safeguard functions. Components tested included SW pumps "C" and "D", SW booster pump "B", associated discharge check valves, north SW strainer, north header valves, and the north strainer pit level switch.

A pretest briefing was held in the control room. The inspector attended the briefing and found it to be thorough, covering all appropriate precautions and limitations, including salient information from previous surveillances. The briefing was attended by all appropriate personnel required for performance of the test.

The inspector witnessed performance of operations personnel during conduct of the OST for those portions performed at the intake structure. A licensed reactor operator performed the required actions at the intake structure. Communications were maintained continuously between the operator and the control room, resulting in good coordination of the evolution. All test steps were performed as required by the procedure and in the proper sequence. The inspector observed the operator obtain various data required by the test. Valve stroke times were correctly measured by the operator. The operator paid particular attention to obtaining pump discharge pressures, ensuring that the gauges were accurately read.

During the performance of the OST, flow rates for SW pumps "C" and "D" were measured ultrasonically by a Controlotron flow measuring device installed on the north SW header. Flows for both pumps were found to be in the "required action" range specified by their respective data tables in the procedure. These pumps were declared out of service as required by the OST-302-2 acceptance criteria. This resulted in the entering of TS Action Statement (72 hr.) 3.7.7.A, one SWS train inoperable. Also, the loss of both SW pumps caused the "B" emergency diesel generator (EDG) to be declared inoperable, placing the plant in TS Action Statement 3.8.1.B, one EDG inoperable.

During the OST, flow in the SW header was secured. The Controlotron indicated a flowrate of -300 gallons per minute (gpm) suggesting instrument drift. Attempts were made to install a portable Controlotron; however, during installation, smoke was observed coming from the portable unit when it was plugged into the wall socket. It was immediately unplugged and removed from the worksite. The test was completed on back shift. During this shift, the original Controlotron was re-zeroed and adjustments were made to the transducer coupling. Flow measurements for both pumps were again low. A work request was submitted to check and adjust the impeller clearances on the pumps. Impeller adjustments were required for both pumps and flow rates were again measured. The SW pump "C" flow reference values were re-established by engineering and the pump was declared operable. The flow rate for the SW pump "D" improved to the alert range and was subsequently declared operable. New flow reference values for pump "D" were also established. This restored both trains of SW and the above TS action statements were exited. The remainder of the OST was performed satisfactorily.

A condition report was issued addressing the degraded performance of the SW pumps. It was concluded that the decrease in flow for both pumps was attributable to normal service induced wear. As a result, pump replacement frequency was increased from a 90 month interval to a 48 month interval. It is also expected that a pump lift to adjust impeller clearances will have to be performed on a 18-24 month cycle. One additional planned corrective action to reduce impeller wear is to go from a bronze impeller material to stainless steel.

c. Conclusions

The inspector concluded that the performance of OST-302-2 was satisfactorily accomplished. Coordination of the test was good. The licensee's response to out of specification conditions was appropriate, including the entering of the required action statements. Sound engineering judgment was used to correct the out of specification conditions, and the implementation of the remedies was performed in a timely manner.

M3 Maintenance Procedures and Documentation

M3.1 Fuse Clips and Blown Fuse Indicators Not Installed On the Fuses in the Rod Control Cabinets (62707)

a. Inspection Scope

The inspector reviewed circumstances related to a condition where the licensee identified that the fuse clips and the blown fuse indicators were not installed on all the fuses for the control rod power supplies within the rod control cabinets. This condition was identified during a training walkdown requiring opening the power cabinets. CR 98-01137 was initiated as a result of this condition. The fuse clip prevents a fuse from inadvertently coming off, thus reducing the possibility of a rod drop. Blown fuse indicators allow the licensee to identify a blown fuse on the power supply.

b. Observations and Findings

Power fuses as well as the associated fuse clips and blown fuse indicators for control rod power supplies are removed during refueling outages. Preventive Maintenance (PM) 051, Megger and Bridge Control Rod Drive Mechanism (CRDMS) (Refueling Interval) and Engineering Surveillance Test (EST)-048, Control Rod Drop Test are among the procedures that are performed during the outage. PM-51 provides instructions to perform resistance testing on the CRDM coils at the reactor head and rod control power cabinets, which requires pulling out the fuse clips and the fuses. EST-048, which is performed following completion of PM-51, provides instructions to perform rod drop testing.

Prior to the 1998 refueling outage (RFO-18), rod drop testing was conducted on individual rods by pulling each associated fuse. Following completion of each rod drop test, a step in that section of the EST ensured the re-installation of the fuse clips and blown fuse indicators. EST-048 was revised during RFO-18 (Revision 13). This revision added a section that also allowed rod bank drop testing as opposed to individual rod. The rod bank testing was accomplished by opening the reactor trip breakers as opposed to pulling fuses. Consideration to the installation of the fuse clips and blown fuse indicators was not given during the addition of the rod bank drop time testing section during this revision. Thus, following completion of rod bank testing per EST-048, it was not recognized that the fuse clips and blown fuse indicators needed to be

installed. Therefore, following completion of EST-048, the fuse clips and the blown fuse indicators for each of the control rods remained uninstalled. The fuse clips and the blown fuse indicators were found in a plastic bag within the control rod power cabinet.

The licensee concluded that the root cause of this event was incomplete technical review prior to revising EST-048. Licensee corrective actions included revision to PM-51 to include provision for reinstalling clips and blown fuse indicators following single rod drop or bank rod drop testing. Licensee also plans to revise EST-048 to appropriately verify fuse clip and blown fuse indicator installation. Additionally, the licensee implemented an "Action Plan" whereby a thermographic profile of the fuses was obtained to assess localized heating due to fuse contact problems. No anomalies were noted during this thermography. Current licensee plans are to reinstall the fuse clips and blown fuse indicators during the next unit shutdown (scheduled or unscheduled).

The inspector reviewed the CR, discussed the event with the licensee, and observed portions of the thermography. The inspector concluded that the direct safety significance of the condition was minimal. The potential consequence of the as found condition could ultimately manifest in a dropped rod type event.

The failure to have the fuse clips and blown fuse indicators installed is considered a violation relating to an inadequate procedure. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation consistent with Section VII.B.1 of the NRC Enforcement Policy. This item is identified as NCV 50-261/98-06-02, Missing Fuse Clips in Rod Control Cabinets.

c. Conclusions

A NCV for failure to install fuse clips and blown fuse indicators for the control rod power supplies was identified. The failure was caused by an inadequate procedure. Safety significance of the condition was determined to be minor.

M3.2 Inspection of "B" Emergency Diesel Generator(EDG) Semi-Annual Preventive Maintenance (PM-007) (62707) (61726)

a. Inspection Scope

The inspector observed portions of PM-007 performed on the "B" EDG. During the maintenance and subsequent post maintenance testing, a number of problems were encountered.

b. Observations and Findings

During the exhaust bolting and joint inspection portion of PM-007, the mechanics were unable to achieve the required torque on one of two bolts that secured one of the exhaust manifold strong backs to the engine block. It was determined that threads were stripped on the bolt or

block or both, allowing the bolt to rotate without a corresponding increase in torque. An engineering service request (ESR) was written to evaluate the load bearing capability of the bolt and crank case vacuum leakage potential. The existing bolt condition was determined to be satisfactory.

While establishing the valve line up for the slow speed start and maintenance run, the standby lube oil recirculation pump was started. This pump normally runs continuously while the diesel is in standby to maintain proper lube oil operating temperature. The pump made an abnormal noise upon starting. It was determined that the outboard motor bearing had failed. The standby lube oil recirculation pump and motor were replaced prior to initiating post maintenance testing. This extended the "B" EDG unavailability several hours.

During the performance of Operations Procedure OP-604 (Slow Speed Start and Maintenance Run), it was observed that fuel oil was spraying from tubing at the #1 injector. The diesel was immediately stopped and the fuel spill cleaned up. The fuel leak was the result of a crack along the thread of a reducer fitting in the excess fuel return line. The fitting was replaced and the test resumed. The failed fitting was sent to the licensee's material lab in an effort to determine the root cause of the failure.

Operational Surveillance Test OST-409-2, EDG "B" Fast Speed Start was performed as part of the post maintenance testing. TS SR 3.8.1.7 requires that each EDG start from standby condition and achieve operational voltage and frequency in less than or equal to 10 seconds. A three channel chart recorder was used to measure voltage and frequency of the generator output during the fast speed start to determine if the above requirement was met. During the initial start, it was apparent that the chart recorder was not programmed correctly to capture the necessary data. The Astro-Med recorder is normally dedicated for EDG surveillance testing. However, during the last outage, the recorder was used for control rod testing and re-programmed accordingly. After rod testing, the recorder was not re-programmed for EDG surveillance testing. The OST required that the calibration was valid but there was no requirement to operationally check the recorder prior to the test. The licensee programmed the recorder to the correct settings and the entire OST was re-performed. This delayed the operability of the "B" EDG. The licensee is planning to modify OST-409 so that the recorder is checked for the appropriate settings prior to use.

c. Conclusions

The inspector concluded that semi-annual maintenance was satisfactorily accomplished for the "B" EDG. Several material and component problems were encountered during the maintenance and post maintenance testing. Resolution of these problems was accomplished expeditiously and appropriately through good coordination between maintenance, engineering and operations personnel. The inspector identified a procedural

weakness with regard to the disposition of test equipment during OST-409-2. The procedure did not require that the chart recorder used for capturing surveillance acceptance criteria be checked for proper set-up and programming. As a result, OST-409-2 was re-performed, extending the unavailability time for the "B" EDG. The "B" EDG was returned to operability within the required time allowed by TS.

III. Engineering

E4 Engineering Staff Knowledge and Performance

E4.1 Charging Pump Net Positive Suction Head (NPSH) (37551)

a. Inspection Scope

The inspector reviewed Nuclear Assessment Section (NAS) assessment R-ES-98-02 that was performed in May, 1998, on the Chemical and Volume Control System (CVCS). This assessment identified several deficiencies related to design changes implemented in 1997 to the Refueling Water Storage Tank (RWST) level. In particular, the deficiencies related to available NPSH for the three positive displacement charging pumps. The inspector reviewed and discussed the NAS audit to assess significance.

b. Observations and Findings

The NAS assessment of the CVCS system was conducted to determine the effectiveness of design control activities. The NRC Architectural Engineering (A/E) inspection conducted in 1997 (Inspection Report Numbers 50-261/97-201 & 98-03) identified several design control issues at Robinson. Most significant of which was the inadequate available NPSH for the Safety Injection (SI) pumps. As a result of the inadequate NPSH for the SI pumps, the licensee completed several modifications to ensure adequate NPSH for the SI pumps. These included raising the RWST water level and modifying suction piping to the SI pumps. During the resolution of this problem, the licensee also verified that there was adequate NPSH to the Containment Spray (CS) and the Residual Heat Removal (RHR) pumps. These pumps also draw suction from the RWST. However, NAS assessment identified that the licensee had not verified the available versus required NPSH for the charging pumps, which also draw suction from the RWST following a safety injection actuation.

The assessment identified a concern related to the continued operation of the charging pumps with the RWST as a water source and the level below the low level alarm setpoint (27 percent). This low level is the level at which switch-over to recirculation is initiated in accordance with Emergency Procedures (EPP-009, Transfer to Cold Leg Recirculation). Though EPP-009 directs that all operating pumps except for one SI pump and one CS pump be stopped upon reaching the low level in the RWST, and that all pumps are stopped prior to reaching the low-low level (nine percent), there is a time delay before securing the charging pumps at RWST level less than 27 percent. The licensee confirmed that there was adequate NPSH available for the charging pumps at an RWST level of 27

percent. However, at nine percent, the available NPSH to the charging pumps was noted to be inadequate. Since switch over takes place between 27 percent and nine percent, the licensee evaluated the condition to determine impact on the charging pumps. The licensee concluded that although there is a point below 27 percent level in the RWST where the required NPSH for the charging pumps is no longer met and the charging pumps continue to run, there is no safety significance for loss of the charging pumps as no credit is taken for the running charging pumps in the accident mitigation safety analysis. Therefore, it was not necessary to revise the Operations Procedures at this time. The licensee also determined that if the revision of the calculation indicates that NPSH for operating three charging pumps is a problem above the low-low level, further guidance would be added to the operations procedures. The licensee issued a night order to ensure that operators were informed of the condition. The licensee had not completed the evaluation and pending licensee completion of this evaluation, this item will be tracked as Inspector Follow up Item (IFI) 50-261/98-06-03, Charging Pump NPSH Issues.

The NAS evaluation also identified several other deficiencies related to the design control processes resulting from recent design changes to the RWST. The licensee initiated a condition report (CR) 98-01119 as a result of this assessment.

c. Conclusions

The inspector concluded that the NAS assessment was thorough, which resulted in the identification of several deficiencies. The safety significance of the inadequate NPSH for the charging pumps under certain conditions was minor as they are not relied upon during accident mitigation. However, the deficiency highlighted weaknesses in the design control process. Specifically, the responsible engineer as well as the reviewers had failed to recognize the impact on the charging pumps during the ongoing efforts to address the SI NPSH issues following the A/E inspection.

E8 Miscellaneous Engineering Issues (92903) (37551)

- E8.1 (Closed) Inspector Follow-up Item 50-261/96-12-04: Review Licensee Actions to Address Potential ISI Isometric Drawing Problems. This IFI was identified following problems related to procedural requirements for drawing revisions. Specifically, the licensee had experienced problems whereby system isometric drawings did not reflect newly added, or old welds deleted from the ISI programs. As corrective action, the licensee upgraded the affected Technical Management Procedure (TMM)-015, In service Inspection Repair and Replacement Program (Rev. 26) to better clarify drawing update requirements. These corrective actions were tracked through CR-96-02437. The inspector also reviewed isometric drawings for several system modifications that were performed during RFO-18 and concluded that the drawings had been adequately updated to reflect the addition of new welds. This item is closed.

- E8.2 (Closed) Violation 50-261/96-14-02: Failure to Complete Corrective Actions to Resolve Containment Liner Corrosion per Engineering Evaluation. This violation was caused by inadequate human performance which resulted in the licensee not inspecting the containment liner to determine if there were any areas of corrosion that exceeded acceptance criteria specified in Engineering Evaluation 93-159. As corrective action, the licensee adequately completed the inspection of the containment liner. This is further documented in NRC Inspection Report 50-261/98-02. Additional corrective action included revision to the Maintenance Management Manual MMM-003, Maintenance Work Requests. This was revised to provide controls which will require concise justification for work request cancellations. This item is closed.
- E8.3 (Closed) Escalated Enforcement Item 50-261/97-10-04: Unresolved Safety Question on Spent Fuel Cask Movement. This item was adequately addressed in a letter to the licensee granting enforcement discretion dated November 7, 1997. This item is closed.
- E8.4 (Closed) EEI 98-03-01: Inadequate Design Control. This item was addressed in three violations issued in a letter to the licensee dated March 4, 1998. This item is closed.
- E8.5 (Closed) EEI 98-03-04: Safety Injection Pumps Inoperable Due to Inadequate Net Positive Suction Head. This item was addressed in a violation issued in a letter to the licensee dated March 4, 1998. This item is closed.
- E8.6 (Closed) Violation 50-261/96-12-02: Inadequate Safety Injection Check Valve Testing. This violation was caused by failure to incorporate lessons learned from previous performances of procedure Operations Surveillance Test (OST)-160 "Pressure Isolation Check Valve Back Leakage Test," into the procedure. The licensee responded to the violation by letter dated January 15, 1997. OST-160, revision 23, did not include sufficient instructions for configuring test apparatus and resulted in a water hammer of the safety injection system cold leg injection lines. As corrective action, the licensee completed a walkdown of the safety injection system cold leg injection piping and repaired one pipe restraint. OST-160 was revised to provide guidance and prevent recurrence. The issue was discussed at licensee operator training and water hammer training was conducted. A separate procedure review was conducted to determine if other procedures had the potential to cause water hammers. This item is closed.
- E8.7 (Closed) LER 50-261/98-01-01: Open Travel Limit For Containment Purge Valves Found To Exceed Requirements Of Technical Specification 3.6.3. During a plant refueling outage, while performing open limit surveillance, licensee maintenance personnel identified that the open travel limits for the inside containment purge supply and purge exhaust valves were set at 79 and 80 degrees respectively. Technical Specifications (TS) require the open limits for these valves to be less than or equal to 70 degrees. The original purge valves were replaced on

March 14, 1986, and the noncompliance with the TS existed since July 3, 1986, when TS amendment 99 established a 70 degree opening limit in the Bases of original TS 3.6.4. Improved Technical Specifications (ITS) which were implemented on November 13, 1997, contain the 70 degree limit in section 3.6.3. and surveillance requirement SR 3.6.3.6 to verify that the inside purge valve is blocked to restrict the valve from opening greater than 70 degrees. The original TS did not contain a surveillance requirement to verify the open limit. Modification 874 which installed the new purge valves did not contain post modification testing to verify that the open limits were set to less than 70 degrees. The cause of the event was the failure to perform verification of the 70 degree open limit following plant modification. The licensee reviewed the operability of the outside containment purge valves and found no operability issues from the period of March 14, 1986, when the new purge valves were installed until March 25, 1998. As corrective action the licensee implemented work requests on April 8, 1998, to reset the inside containment purge valve open limits to less than 70 degrees. Procedure Maintenance Surveillance Test (MST)-933, revision 2, "Opening Position Verification For The Inboard Containment Purge Valve V12-7 and V12-9" was implemented to periodically verify the open travel limits. The inspectors reviewed modification 874 and noted that the modification acceptance testing did not check the open travel limits. The work packages which restored the open limits were reviewed and the inspectors verified that the limits were left at less than 70 degrees. This was a violation of TS 3.6.3.A. This non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This item is designated NCV 50-261/98-06-04, Open Travel Limit For Containment Purge Valves Found To Exceed Requirements of Technical Specification 3.6.3. This item is closed.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments (71750)

The inspector periodically toured the Radiological Control Area (RCA) during the inspection period. Radiological control practices were observed and discussed with radiological control personnel including RCA entry and exit, survey postings, locked high radiation areas, and radiological area material conditions. The inspector concluded that radiation control practices were proper.

P8 Miscellaneous EP Issues (71750)

P8.1 Fire Protection and Emergency Preparedness (EP)

a. Inspection Scope

The inspector reviewed and walked down portions of the fire protection (FP) system, observed performance of a FP surveillance, and the conduct

of a fire drill. The inspector also observed two emergency drills that were conducted which involved activation of the emergency response facilities.

b. Observations and Findings

The inspector noted that the fire protection system was well maintained and the surveillance and the drill were well conducted. The inspector did note that procedure FP-008 listed Fire Detection Zones as Fire Zones. This discrepancy was pointed out to the fire protection engineers who agreed to revise the procedure.

c. Conclusions

The inspector concluded that observed fire protection and Emergency Preparedness activities were appropriately conducted. The post drill EP critiques provided positive feedback to the players.

- P8.2 (Closed) Violation 50-261/96-11-02: Inadequate Corrective Actions to Prevent Expired Fire Brigade Medical Physicals. This violation was caused by personnel error. The inspector reviewed the corrective actions which included revisions to the corporate level medical examination tracking system. Further, the inspector reviewed the status of all licensed and non-licensed operators and fire brigade members and verified that no medical exams were overdue. This violation is closed.

S1 Conduct of Security and Safeguards Activities

S1.1 General Comments (71750)

During the period, the inspector toured the protected area and noted that the perimeter fence was intact and not compromised by erosion or disrepair. Isolation zones were maintained on both sides of the barrier and were free of objects which could shield or conceal an individual. The inspector periodically observed personnel, packages, and vehicles entering the protected area and verified that necessary searches, visitor escorting, and special purpose detectors were used as applicable prior to entry. Lighting of the perimeter and of the protected area was acceptable and met illumination requirements.

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 June 26, 1998. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Boska, Manager, Operations
H. Chernoff, Supervisor, Licensing/Regulatory Programs
T. Cleary, Manager, Maintenance
J. Clements, Manager, Site Support Services
D. Young, Vice President, Robinson Nuclear Plant
R. Duncan, Manager, Robinson Engineering Support Services
R. Moore, Manager, Outage Management
J. Moyer, Director, Site Operations
D. Stoddard, Manager, Operating Experience Assessment
R. Warden, Manager, Nuclear Assessment Section
T. Wilkerson, Manager, Regulatory Affairs

NRC

B. Desai, Senior Resident Inspector
M. Ernstes, Acting Branch Chief, Region II

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observations
 IP 62707: Maintenance Observation
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 92901: Followup - Operations
 IP 92903: Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
NCV	50-261/98-06-01	Open	Failure to Log TS Action Statement (Section 02.1).
NCV	50-261/98-06-02	Open	Missing Fuse Clips in Rod Control Cabinets (Section M3.1).
IFI	50-261/98-06-03	Open	Charging Pump NPSH Issues (Section E4.1).
NCV	50-261/98-06-04	Open	Open Travel Limit For Containment Purge Valves Found To Exceed Requirements of Technical Specification 3.6.3 (Section E8.7)

Closed

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
NCV	50-261/98-06-01	Closed	Failure to Log TS Action Statement (Section 02.1).
NCV	50-261/98-06-02	Closed	Missing Fuse Clips in Rod Control Cabinets (Section M3.1).
IFI	50-261/96-12-04	Closed	Review Licensee Actions to Address Potential ISI Isometric Drawing Problems (Section E8.1).
VIO	50-261/96-14-02	Closed	Failure to Complete Corrective Actions to Resolve Containment Liner Corrosion per Engineering Evaluation (Section E8.2).

EEI	50-261/97-10-04	Closed	Unresolved Safety Question on Spent Fuel Cask Movement (Section E8.3).
EEI	50-261/98-03-01	Closed	Inadequate Design Control Question on Spent Fuel Cask Movement (Section E8.4).
EEI	50-261/98-03-04	Closed	Safety Injection Pumps Inoperable Due To Inadequate Net Positive Suction Head (Section E8.5).
VIO	50-261/96-12-02	Closed	Inadequate Safety Injection Check Valve Testing (Section E8.6).
NCV	50-261/98-06-04	Closed	Open Travel Limit For Containment Purge Valves Found To Exceed Requirements of Technical Specification 3.6.3 (Section E8.7).
LER	50-261/98-01-01	Closed	Open Travel Limit For Containment Purge Valves Found To Exceed Requirements of Technical Specification 3.6.3 (Section E8.7).
VIO	50-261/96-11-02	Closed	Inadequate Corrective Actions to Prevent Expired Fire Brigade Medical Physicals (Section P8.2).