UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 17, 2003

Carolina Power & Light Company
ATTN: Mr. John W. Moyer
Vice President
H. B. Robinson Steam Electric Plant
Unit 2
3851 West Entrance Road
Hartsville, SC 29550

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT- NRC INTEGRATED INSPECTION REPORT 50-261/02-04 AND 72-03/02-01

Dear Mr. Moyer:

On December 21, 2002, the Nuclear Regulatory Commission (NRC) completed an inspection at your Robinson facility. The enclosed integrated inspection report documents the inspection findings which were discussed on December 20, 2002, with Mr. Chris Burton and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was also determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Robinson facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Paul E. Fredrickson, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos.: 50-261, 72-03
License Nos.: DPR-23, SNM-2502

Enclosure: Inspection Report 50-261/02-04, 72-03/02-01
w/Attachment: Supplemental Information

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REGION II

Docket Nos:	50-261, 72-03
License Nos:	DRP-23, SNM-2502
Report No:	50-261/02-04, 72-03/02-01
Licensee:	Carolina Power & Light (CP&L)
Facility:	H. B. Robinson Steam Electric Plant, Unit 2
Location:	3581 West Entrance Road Hartsville, SC 29550
Dates:	September 29, 2002 - December 21, 2002
Inspectors:	B. Desai, Senior Resident Inspector A. Hutto, Resident Inspector D. Jones Resident Inspector F. Wright, Senior Radiation Specialist (2PS2) J. Kreh, Radiation Specialist (2OS1) K. Davis, Physical Security Inspector (4OA5.2) R. Hamilton, Radiation Specialist (2OS1, 2OS2, 4OA1) W. Bearden, Reactor Inspector (1RO8, 4OA5.1) S. Vias, Senior Reactor Inspector (1R12.2) W. Sartor, Senior Emergency Preparedness Inspector (1EP2, 1EP3, 1EP4, 1EP5, 40A1)
Approved by:	Paul E. Fredrickson, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000261/2002-004; Carolina Power & Light Company; 09/29/2002 - 12/21/2002; H. B. Robinson Steam Electric Plant, Unit 2; Post Maintenance Testing.

The report covered a three month period of inspection by resident inspectors, and announced inspections by region based radiation specialists, a physical security inspector, reactor inspectors, and an emergency preparedness inspector. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified and Self Revealing Findings

Cornerstone: Mitigating Systems

- Green. A failure to adequately implement an equipment clearance procedure resulted in an extended unavailability and inoperability of the B motor driven auxiliary feedwater (MDAFW) pump.

  A non-cited violation of Technical Specification (TS) 5.4.1 was identified. This finding is greater than minor as the clearance error extended the total unavailability and inoperability of the B MDAFW pump beyond that originally planned. The finding is of very low safety significance as the total inoperability of the B MDAFW pump did not exceed TS allowed outage time and both the A MDAFW train and the steam driven auxiliary feedwater pump were operable. (Section 1R19)

B. Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status

A coast down from 100 percent power was initiated on October 1, 2002, in preparation for refueling outage (RFO) 21. The unit was taken off line on October 12. Following completion of the outage, the unit was taken critical on November 13 and placed online later that day. The unit reached 100 percent power on November 16. On November 24, the unit was shutdown and taken offline to conduct repairs on a steam leak that developed on the turbine cylinder heating system. The unit was returned to 100 percent power later the same day.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and Procedure OMM-21, Operation During Adverse Weather Conditions, which is applicable for adverse weather conditions. This review was performed to assess licensee readiness for coping with cold weather conditions. The focus of the inspection was to ensure operability of safety-related systems as well as certain non-safety-related systems that contributed to overall plant risk and had the potential of being adversely affected due to freezing during cold weather conditions. The inspectors periodically walked down freeze protection panels to verify that freeze protection circuits were operating and walked down the temporary heaters and enclosures that were installed at various locations to ensure protection during cold weather conditions. For two adverse weather preparation samples, the inspectors reviewed cold weather preparations for the main steam and auxiliary feedwater systems. In particular, the inspectors checked the insulation protecting the main steam system, and reviewed the temporary heater providing protection to the steam driven auxiliary feedwater (SDAFW) pump. An actual adverse weather observation occurred on the fire protection system. The inspectors reviewed licensee activities related to a reported failure of a freeze protection circuit associated with a fire protection line.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns: The inspectors performed three partial system walkdowns during this inspection period. On October 2, the inspectors walked down the

containment purge system with the containment purge inlet valve V-12-7 out-of-service (OOS) due to failure of the air operator. On October 8, the inspectors walked down the SDAFW and A train motor driven AFW systems while the B train AFW system was OOS for scheduled maintenance. On November 6, the inspectors walked down the A emergency diesel generator (EDG) while the B EDG was OOS for a failed surveillance test. To evaluate the operability of the selected train or system when the redundant train or system was inoperable or OOS, the inspectors checked for correct valve and power alignments by comparing positions of valves, switches, and electrical power breakers to the procedures and drawings listed below as well as applicable chapters of the UFSAR.

- OP-402, Auxiliary Feedwater System
- OP-604, Diesel Generators A and B
- OP-921, Containment Air Handling
- Drawing Nos. G-190197, G-190204A, and G-190304

Complete System Walkdown: The inspectors conducted a detailed review of the alignment and condition of the residual heat removal (RHR) system. The inspectors used the procedures and other documents listed below as well as applicable chapters of the UFSAR to verify proper system alignment:

- OP-201, Residual Heat Removal System
- OST-253, Comprehensive Flow Test for the RHR Pumps
- Drawing 5379-1484

The detailed review included electrical power requirements, labeling, hangers and support installation, and associated support systems status. The walkdowns also included evaluation of system piping and supports against the following considerations:

- Piping and supports did not show evidence of water hammer.
- Oil reservoir levels indicated normal.
- Snubbers did not indicate any observable hydraulic fluid leakage.
- Component foundations were not degraded.

A review of outstanding maintenance work orders was performed to verify that the deficiencies did not significantly affect the RHR system function. The inspectors reviewed the action request (AR) database to verify that all RHR equipment alignment problems were being identified and appropriately resolved.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

During the inspection period, the inspectors walked down accessible portions of the six areas described below to assess the licensee's control of transient combustible material

and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. As part of the inspection, the inspectors reviewed the licensee's Fire Hazard Analysis, UFSAR section 9.5.1A, to ascertain the requirements for fire protection design features, fire area boundaries, and combustible loading for these areas. Documents reviewed during the inspection are listed in the Attachment. The following areas were inspected:

- Safety Injection (SI) pump room
- Turbine building
- 4.16 KV switchgear room
- EDG rooms
- Main steamline penetration area which includes main steam isolation valves (MSIVs) and main steam power operated relief valves (PORVs)
- Turbine deck where an actual fire occurred during welding activities (fire was extinguished prior to fire brigade response)

The inspectors also observed a fire drill conducted on November 26, to assess readiness of the licensee's capability to fight fires. The fire was simulated in the dedicated shutdown diesel enclosure. The inspectors evaluated the following attributes:

- protective clothing/self contained breathing apparatus properly worn
- adequacy of fire hoses
- controlled access to the fire area by the fire brigade members
- adequacy of fire fighting equipment
- clarity and effectiveness of the fire brigade leader
- adequate communications
- effectiveness of smoke removal gear

b. Findings

No findings of significance were identified.

IR06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the licensee's analysis of the affects of internal flooding of the containment building as described in the UFSAR. Containment walkdowns were conducted during the refueling outage to determine the affects of a leaking refueling cavity seal. The inspectors verified that the leak from the cavity seal was within the capacity of the recirculation pump to return the water to the refueling cavity and did not pose a flooding concern inside containment during the refueling outage.

For the external flood protection inspection, the inspectors walked down the dam located on Lake Robinson to determine overall material condition of the tainter gates. External flood control is accomplished by controlling lake level which is monitored and controlled by Unit 1 (fossil plant) personnel. The inspectors reviewed Procedure OPS-RFPC-00014, Robinson Impoundment Operation which is used to control lake level and

potential external flooding. The inspectors also discussed the operation of the tainter gates with Unit 1 personnel.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities

a. Inspection Scope

The inspectors observed in-process ISI work activities and reviewed selected ISI records. The observations and records were compared to the Technical Specifications (TS) and the applicable Code (ASME Boiler and Pressure Vessel Code, Sections V and XI, 1995 Edition, with 1996 Addenda) to verify compliance.

The inspectors observed in-process acquisition and analysis of Grooveman Eddy Current (ET) examination data of reactor vessel head control rod drive mechanism (CRDM) nozzle J-Welds and open housing eddy current and ultrasonic (UT) examination data. Additionally, the inspectors reviewed portions of a video tape of the completed remote visual examination of reactor pressure vessel (RPV) head penetrations for leakage.

The inspectors reviewed procedures for the ET examination of the steam generators (SG). The licensee's ET examination plan for RFO-21 was compared to the TS, license amendments and applicable industry established performance criteria to verify compliance. Qualification and certification records for examiners, and equipment for the above ET examination activities were reviewed.

The inspectors reviewed the dry magnetic particle (MT) examination reports for the following components:

Weld 212/23BC	Twenty six inch ASME Class II main steam piping weld
Weld 212/24	Twenty six inch ASME Class II main steam piping weld
Weld 212/31BC	Twenty six inch ASME Class II main steam piping weld
Weld 212/32	Twenty six inch ASME Class II main steam piping weld

The inspectors reviewed the calibration records and UT examination reports for the following components:

Weld 212/23BC	Twenty six inch ASME Class II main steam piping weld
Weld 212/32	Twenty six inch ASME Class II main steam piping weld
Weld 216/79-13-B	Eighteen inch ASME Class II Steam Generator B nozzle to elbow weld
Flywheel 144/A	Reactor Coolant Pump A flywheel
Flywheel 144/B	Reactor Coolant Pump B flywheel

Qualification and certification records for examiners, equipment and consumables, and nondestructive examination (NDE) procedures for the above ISI examination activities

were reviewed. Three inspection rejection reports documenting minor deficiencies associated with hanger and support visual inspections were reviewed by the inspectors.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed licensed operator requalification training activities which included a simulator evolution. The training scenario observed involved a controlled plant shutdown in preparation for the refueling outage. The inspectors assessed licensed operator performance during the evolution to verify that the crew correctly diagnosed abnormal conditions and that the appropriate emergency operating procedures were used when necessary. The inspectors observed the effectiveness of command and control demonstrated by the crew.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

.1 Quarterly Evaluation

a. Inspection Scope

The inspectors assessed the effectiveness of the licensee's maintenance efforts by evaluating three conditions that occurred during the inspection period. The inspection determined the risk significance of the condition, licensee implementation of the Maintenance Rule (MR) (10 CFR 50.65) with respect to characterization of failures, the appropriateness of the associated MR a(1) or a(2) classification as well as the associated performance criteria, and the utilization of the corrective action program. Documents reviewed are listed in the Attachment. The specific conditions evaluated by the inspectors included:

- RHR pump gasket failure causing a leak of approximately 4 gallons per minute and a functional failure of the pump
- EDG fuel injector related problems
- EDG fuel rack related problems

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation

a. Inspection Scope

The objective of the inspection was to:

- Verify that the periodic evaluation was completed within the time restraints defined in 10 CFR 50.65, (the MR) (once per refueling cycle, not to exceed two years), ensuring that the licensee reviewed its goals, monitoring, preventive maintenance activities, industry operating experience, and made appropriate adjustments as a result of that review;

- Verify that the licensee balanced reliability and unavailability during the previous refueling cycle, including a review of safety significant structures, systems, and components (SSC);

- Verify that (a)(1) goals were met, corrective actions were appropriate to correct the defective condition including the use of industry operating experience, and (a)(1) activities and related goals were adjusted as needed; and

- Verify that the licensee has established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, or reviewed any SSCs that have suffered repeated maintenance preventable functional failures including a verification that failed SSCs were considered for (a)(1).

The inspectors examined the last two periodic evaluation reports for the time frames June 1, 1999 - October 30, 2000 and October 1, 2000 - March 31, 2002. The inspectors reviewed to determine if the assessment was issued in accordance with the time requirements of the MR and included evaluation of balancing reliability and unavailability, MR (a)(1) and (a)(2) activities, and use of industry operating experience. To verify compliance with 10 CFR 50.65, the inspectors reviewed selected MR activities and documentation and held discussions with the system engineering staff for the areas covered by the assessment period for the following risk significant systems: component cooling water (CCW) (4080), low head safety injection/ residual heat removal (LHSI/RHR) (2045), steam generator (3005) and service water (SW) (4060). Additionally, the inspectors reviewed the last two MR self assessment reports issued to determine if corrective actions for deficiencies were being appropriately addressed.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments for the following five plant configurations. The inspectors reviewed the licensee's implementation of 10 CFR 50.65 (a)(4) requirements during scheduled and emergent maintenance activities using

Operations Management Manual OMM-048, Work Coordination and Safety Assessment. The inspectors reviewed the effectiveness of licensee actions to plan and control scheduled work to minimize overall plant risk while the emergent work items were being addressed. The inspectors reviewed the applicable plant risk profiles, work week schedules, and maintenance work requests associated with the following out of service equipment:

- C charging pump, A instrument air compressor, and main steam safety valve testing in progress
- Procedure OMP-003 shutdown safety function verification
- SDAFW pump OOS due to sparks noted during test run
- B EDG OOS due to governor problems
- A AFW pump OOS

Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

On October 9, leakage from pressurizer PORV PCV-456 was noted due to annunciator APP-003-F6 alarming. The operators responded by isolating PORV block valve RC-535. For this non-routine event, the inspectors reviewed operator logs and evaluated operator performance and response to control room annunciator panels to verify that the response was in accordance with approved plant procedures. The inspectors also reviewed the response procedure for annunciator APP-003-F6. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors selected three operability evaluations/engineering changes (ECs)/ARs affecting the risk significant mitigating systems listed below to assess as appropriate: (1) the technical adequacy and accuracy of the evaluations; (2) whether continued component or system operability was justified; and (3) whether other existing degraded conditions were considered for compensatory measures. Documents reviewed are listed in the Attachment.

- Main steam relief valve testing failures
- Containment vacuum relief valve V12-12 crack

- EDG fuel oil transfer pump switch problems at control room panel

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors performed a cumulative review of existing operator work-arounds to determine any change from the previous review. The review also considered the effect of the work-arounds on the operators' ability to implement abnormal operating procedures (AOPs) or emergency operating procedures (EOPs). The inspectors periodically reviewed ARs and held discussions with operators to determine if any conditions existed that should have been identified by the licensee as operator work-arounds. Additionally, the inspectors reviewed the licensee's compensatory actions put in place as a result of the startup/auxiliary transformer deluge system being OOS. The inspectors reviewed these actions to determine if the functional capability of the transformers or human reliability in responding to an initiating event was affected, and to evaluate the effect on operators' ability to implement AOPs or EOPs. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed EC 01-00195, Diesel Fuel Oil Storage Tank Bottom Repair, to verify that the design basis, licensing basis, and performance capability of the safety-related diesel fuel oil system was not degraded as a result of the modification. Additionally, the inspectors reviewed the modification against the requirements of Procedure EGR-NGGC-005, Engineering Change. The inspectors also assessed the modification for any common cause failure vulnerabilities as related to the EDGs. The inspectors reviewed the associated 10 CFR 50.59 evaluation to verify that modification implementation did not result in risk significant configurations that would place the plant in an unsafe condition. The inspectors also evaluated modification implementation to verify that in-plant EOP and AOP actions, and key safety functions were not affected.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors witnessed the following six post maintenance tests (PMT) and/or reviewed the test data to determine if the tests were adequate for the scope of maintenance and if the acceptance criteria and test results demonstrated the operational readiness of the SSCs in accordance with the TS. Documents reviewed are listed in the Attachment. The activities were selected based on a risk assessment associated with the scheduled or emergent activity.

- EST 064 Containment Isolation Valve Local Leakage Rate Survey
- EST 135 Local Leak Rate Test Of Purge Supply Valve, Vacuum Relief Valves, Equipment Hatch Seal; And Main Steam, Feedwater, Purge Supply And Vacuum Relief Penetration Seals
- OST 163 Safety Injection Test And Emergency Diesel Generator Auto Start On Loss Of Power And Safety Injection
- OST 407 Verification Of Component Response To Blackout Sequence
- OST-201-2 Motor Driven Auxiliary Feedwater (MDAFW) System Component Test - Train B
- WO 319306 Replace Standby Jacket Water Pump Seal On B EDG - Operational Check

b. Findings

Introduction: A Green non-cited violation (NCV) of TS section 5.4.1 was identified for failure to adequately implement an equipment clearance procedure, thus extending the inoperability and unavailability of the B MDAFW pump.

Description: On October 8, 2002, during the initial steps of Procedure OST-201-2, MDAFW System Component Test - Train B, the inspectors observed that a danger/clearance tag was hanging on valve AFW-39 with the valve in the tagged closed position. Valve AFW-39 is the pump discharge pressure switch isolation valve and was tagged closed to provide isolation earlier during the day for scheduled maintenance on the B MDAFW pump. Procedure MST-201-2 was the scheduled post-maintenance test following the work. The B MDAFW pump would not have run with the discharge pressure switch isolated due to a low discharge pressure trip feature in the pump's control circuitry. The danger/clearance tag was subsequently removed and valve AFW-39 returned to its normally open position restoring B AFW train availability approximately one hour later. The inspectors determined that the clearance lift checklist erroneously did not include valve AFW-39. This was due to the fact that the hang and lift checklists for the clearance were prepared together and valve AFW-39 was subsequently added to the hang checklist after a senior reactor operator (SRO) review. The lift checklist was not updated to reflect this addition. Procedure OPS-NGGC-1301, Equipment Clearance, requires that modified clearances be reviewed and authorized in the same fashion as a new clearance. This step was not performed adequately to catch the discrepancy between the modified hang checklist which included valve AFW-39 and the lift checklist which did not.

Analysis: The deficiency does have a credible impact on safety as improper restoration of clearances could lead to equipment damage and/or personnel injury. Further, the clearance error resulted in extending the unavailability and inoperability of a safety related train (B MDAFW), beyond that originally planned. The total extended (from initial planned) unavailability and inoperability of the B AFW Train was approximately two hours. The issue was determined to be of very low safety significance (Green) based on the total inoperability not exceeding the TS allowed outage time of 7 days. Additionally, the A AFW train and the SDAFW train were operable.

Enforcement: TS 5.4.1, Procedures, requires that written procedures be implemented covering the activities in Regulatory Guide 1.33, Revision 2, Appendix A, which includes procedures for equipment control. Contrary to the above, Procedure OPS-NGGC-1301 was not adequately implemented, resulting in the inoperability of the B MDAFW pump. Because the failure to adequately implement this procedure is of very low safety significance and has been entered into the corrective action program (Action Request 73823), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-261/02-04-01, Failure to Adequately Implement Procedure OPS-NGGC-1301, Equipment Clearances.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors reviewed the schedule and contingency plans for Unit 2 refueling outage 21, conducted October 12 - November 13, 2002, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. The inspectors reviewed compliance with the Operating License and the TS during outage activities. Plant configuration control during outage activities was evaluated to verify that the licensee adhered to administrative risk reduction methodologies and developed mitigation strategies for potential losses of key safety functions ensuring defense-in-depth. The following specific areas were inspected:

Review of RFO 21 Plan. Prior to the outage, the inspectors reviewed the licensee's outage risk assessment and planned risk significant windows that included the equipment out-of-service (EOOS) analysis during shutdown, to verify that the licensee had appropriately considered risk, industry experience, and previous site-specific problems. The inspectors reviewed the licensee's outage risk control plan as implemented through Procedure OMP-003, Shutdown Safety Function Guidelines to verify that the licensee delineated shutdown safety function requirements for plant configurations defined in the plan. The inspectors also evaluated, through review of various plant operating manual procedures, licensee mitigation/response strategies for potential losses of the key safety functions.

Monitoring of Shutdown Activities. The inspectors evaluated plant cooldown activities against TS cooldown requirements as implemented through Procedure GP-007, Plant Cooldown from Hot Shutdown to Cold Shutdown.

Outage Configuration Management. The inspectors reviewed plant configuration control to verify that the licensee maintained defense-in-depth commensurate with the outage risk control plan for key safety functions and applicable TS requirements when risk significant equipment was removed from service. The inspectors evaluated plant configuration changes due to emergent work and unexpected conditions to verify that plant configuration was controlled in accordance with the shutdown safety function guidelines. The inspectors routinely reviewed control room posting of shutdown safety function requirements and operator awareness of plant configurations.

Reactor Coolant System (RCS) Instrumentation. The inspectors reviewed the reactor vessel level instruments and standpipe indications to verify that these instruments were installed and configured to provide accurate indication and were calibrated appropriately in accordance with Procedure GP-008, Draining the Reactor Coolant System.

Electrical Power. The status and configuration of electrical systems was reviewed to verify that electrical system alignments met TS requirements and the licensee's shutdown safety function status requirements. Transformer maintenance was reviewed to verify that it was controlled commensurate with safety and was consistent with the licensee's outage risk control plan assumptions.

RHR System Monitoring. The inspectors routinely observed RHR parameters throughout the outage to verify that the system was properly functioning.

Spent Fuel Pool Operation. The inspectors reviewed outage work activities to verify that outage work did not impact the ability of the operations staff to operate the spent fuel pool cooling system during and after core offload.

Inventory Control. The inspectors reviewed RCS inventory addition flow paths, configurations, and alternative means for inventory addition to verify that they were consistent and maintained in accordance with Procedure OMP-003. The inspectors evaluated the adequacy of reactor vessel inventory controls to prevent inventory loss.

Reactivity Control. The inspectors evaluated reactivity controls against TS requirements and reviewed controls for activities which could cause potential unexpected reactivity changes which were identified in Procedure OMP-003.

Refueling Activities. The inspectors reviewed fuel handling operations against requirements in the TS and the licensee's fuel handing/management procedures. The inspectors visually observed selected fuel assembly movement to verify correct assembly position and orientation during core reload. The inspectors evaluated licensee fuel assembly tracking from core offload through core reload.

Monitoring of Heatup and Startup Activities. The inspectors evaluated compliance with the TS, license conditions, commitments, and administrative prerequisites prior to changing modes or plant configurations. The inspectors reviewed RCS leak rates at normal operating temperature and pressure and to verify that containment integrity was set in accordance with Procedure OP-923, Containment Integrity. The inspectors performed a walkdown of containment prior to startup to verify that debris had not been left which could affect containment sump performance. The inspectors observed

reactor startup and initial criticality and portions of physics acceptance testing in accordance with Procedure EST-050, Refueling Startup, and Procedure EST-105, Post-Refueling Power Escalation.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed the following three surveillance tests and/or reviewed test data to verify that the surveillance test results demonstrated that the selected risk significant SSCs were capable of performing their intended safety functions. Specifically, the inspectors considered the following: requirements of the TS, UFSAR and ASME Section XI, and pre-conditioning, plant risk, appropriate acceptance criteria, adequate test equipment, procedure adherence, completeness of data, adequate test frequency, and configuration control. Documents reviewed are listed in the Attachment.

- OST-154, Comprehensive Flow Test for SI Pumps
- EST-50, Refueling Startup Procedure
- OST-410, Emergency Diesel Generator A (24 Hr. Load test)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following two temporary modifications to determine their impact on safety functions. This review included the associated 10 CFR 50.59 screening performed for the modifications against the system design basis, UFSAR and TS requirements, as well as the configuration control of the modification to verify that any affected plant documents, such as drawings and procedures were properly controlled. The inspectors also reviewed the temporary modification log for existing temporary modifications following refueling outage 21 that were recently completed to verify the overall impact on safe plant operations.

- EC 50884 RCP Vibration Setpoints
- EC 50738 Temporary Packing Gland Flange for Valve RC-525

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Testing

a. Inspection Scope

The inspector reviewed the testing program for the alert and notification system (ANS), which comprised 45 pole-mounted sirens within the ten-mile emergency planning zone. The testing program involved weekly silent tests, quarterly growl tests, and an annual full cycle test. The inspector also reviewed maintenance records to verify that repairs for identified siren problems were effective and timely.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing

a. Inspection Scope

The inspector reviewed the documentation supporting the maintenance and testing of the licensee's emergency response organization augmentation system.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspector reviewed changes to the site Emergency Plan through Revision 52 and the emergency action levels to verify that the changes did not decrease the effectiveness of the Emergency Plan. The review was performed against 10 CFR 50.54(q).

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector evaluated the efficacy of licensee programs that addressed weaknesses and deficiencies in emergency preparedness. Items reviewed included exercise and drill critique reports, emergency preparedness assessment reports done by the Nuclear

Assessment Section, and the licensee's corrective action program as identified in selected Action Requests.

b Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control To Radiologically Significant Areas

.1 Access Control

a. Inspection Scope

The inspectors reviewed licensee program activities for monitoring workers and controlling their access to radiologically significant areas and tasks. The inspectors evaluated adequacy of procedural guidance, directly observed implementation of administrative and physical controls, and assessed resultant worker exposures to radiation and radioactive material. Radiation worker and health physics technician (HPT) knowledge and proficiency in implementing Radiation Protection (RP) program specifications were appraised.

During the inspection, radiological controls for the C steam generator manway removal and cleaning were observed and discussed. In addition, access controls and monitoring for selected radiologically significant tasks conducted since October 1, 2001, were evaluated. The evaluations included, as applicable, radiation work permit (RWP) details, use and placement of dosimetry to monitor occupational exposures involving significant dose rate gradients, and electronic dosimetry (ED) setpoints and use in high-noise areas. The effectiveness of established controls was assessed against area radiation and contamination survey results, potential for transient elevated dose rates, and occupational doses received. Physical and administrative controls and their implementation for high radiation area (HRA), locked high radiation area (LHRA), and very high radiation area (VHRA), entries and for storage of highly activated material within the spent fuel pool were evaluated through interviews of HPTs and supervisory staff, reviews of current survey records, and direct observations of the spent fuel pool area, selected auxiliary building HRA/LHRA locations, and waste processing and storage facilities. Occupational worker adherence to selected RWPs and HPT proficiency in providing job coverage were evaluated through direct observations, review of selected exposure records and investigations, and interviews with licensee staff.

The inspectors independently measured radiation dose rates and evaluated posting and access controls for the nonregenerative heat exchanger (lower level) and RHR (residual heat removal) heat exchanger areas in the auxiliary building. In addition, the inspectors also measured dose rates and evaluated posting and access controls for the independent spent fuel storage installation.

RP program activities and implementation were evaluated against 10 CFR 19.12; 10 CFR Part 20, Subparts B, C, F, G, H, and J; Updated Final Safety Analysis Report (UFSAR) Section 12, Radiation Protection; Technical Specification (TS) 5.3 and 5.7; and approved licensee procedures. Licensee documents, records, and data reviewed within this inspection area are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

Issues identified through Radiation Protection (RP) departmental self-assessments and corrective action program documents associated with radiological controls, personnel monitoring, and exposure assessments were reviewed and discussed with cognizant licensee representatives. The inspectors assessed the licensee's ability to identify and resolve the issues identified in this RP program area.

Specific assessments and AR/ Nuclear Condition Report (NCR) documents reviewed and evaluated in detail for this inspection area are identified in the Attachment.

b. Findings

No findings of significance were identified.

2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls

a. Inspection Scope

The inspectors selected and reviewed ALARA planning packages for the six highest collective dose jobs conducted during the previous refueling outage. The review included the extent of the ALARA planning, the types of problems experienced, the degree to which scope expansion necessitated revision of dose or man-hour estimates, and the rigor of post-job critiques. The inspectors also assessed the plant's previous overall outage performance through review of the outage ALARA report.

For the current outage, the inspectors evaluated the ALARA planning packages for seven high collective dose jobs and reviewed the original dose and man-hour estimates, the incorporation of ALARA lessons learned, and the post job critiques from the previous outage. The inspectors also reviewed these ALARA packages as the outage progressed to determine what changes had been made, the basis for the changes, and the degree of management involvement. The inspectors attended an ALARA meeting to assess the licensee's review of a job which had expanded substantially in scope. The inspectors also reviewed the meeting minutes for four previous ALARA review meetings and reviewed documentation of selected post-job critiques and lessons learned for the current outage.

The inspectors discussed and directly observed selected licensee dose reduction initiatives including deployment of temporary shielding, implementation of shutdown chemistry, and utilization of cameras and telemetry for dose and contamination control. The licensee's shutdown chemistry operations were examined in detail, and the inspectors compared post-shutdown dose rates with those that existed after the previous shutdown to determine the net effect on source term.

The application of administrative and engineering controls was evaluated over the course of the inspection for activities in the containment and auxiliary buildings. The inspectors observed selected pre-job briefings associated with filter change outs, resin sluices, and radiography activities for communication of radiological controls. The inspectors observed licensee use of remote monitoring closed circuit televisions and telemetry systems for reactor head work, steam generator manway removal, and eddy current testing equipment setup. Radiography on the turbine deck, valve repairs, containment coatings, equipment removal from containment and subsequent storage and packaging for shipment were directly observed. The inspectors evaluated HPT and worker adherence to radiological controls, the degree of on-the-job supervision, and utilization of low dose waiting areas as well as performed independent surveys of selected work areas.

The Declared Pregnant Woman Program was reviewed for compliance with regulatory requirements. Declaration documentation for the two most recent participants in the program prior to April 2001 was reviewed.

Licensee activities associated with access controls to radiation significant areas were reviewed against the TS, 10 CFR Part 20, and the selected procedures listed in the Attachment.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety (PS)

2PS2 Radioactive Material Processing and Transportation

.1 Waste Processing and Characterization

a. Inspection Scope

During the inspection period, the configuration status and operability of selected radioactive waste (radwaste) processing systems and equipment were evaluated. Inspection activities included document review, direct inspection of processing equipment, and interviews with plant personnel. The direct inspection of radwaste equipment included examination of abandoned equipment, observation of low level waste storage and staging areas, and inspection of the solidification dewatering facility.

The inspectors evaluated radwaste program guidance for waste classification, and procedures for processing spent resin. The inspectors reviewed the licensee's 10 CFR

Part 61 contract laboratory sample gamma analysis results for the waste streams. The 2001 data were evaluated for consistency with the most current 10 CFR Part 61 sample data collected in 2002. The licensee's use of scaling factors for hard-to-detect nuclides was assessed for the primary resin waste stream. The inspectors reviewed procedures for transferring and de-watering spent resin to ensure compliance with the process descriptions in the Process Control Program (PCP) and the system diagrams in the UFSAR Section 11. The inspectors observed de-watering processing and testing.

Licensee personnel were interviewed regarding waste classification analyses and radwaste processing equipment. The inspectors assessed the individuals' knowledge of regulations, understanding of licensee procedures, and familiarity with radwaste system equipment and operation. Waste stream sampling frequency, response to changing plant conditions, and laboratory counting techniques were discussed with waste shipping representatives.

The licensee's program for classifying and processing solid radwaste was evaluated against 10 CFR Part 61; the Branch Technical Position on Waste Classification and Waste Form, January 1995; the Process Control Program, Rev. 5; UFSAR Section 11, Radioactive Waste Management; and licensee procedures documented in the Attachment.

b. Findings

No findings of significance were identified.

.2 Transportation

a. Inspection Scope

The inspectors evaluated the licensee's activities related to transportation of radioactive material. The evaluation included document review, direct observation of shipping activities, and performance of independent radiation surveys of a radioactive materials shipment.

The reviewed documents included shipping procedures, records, and training specifications. Records for five shipments, listed in the Attachment, were reviewed for compliance with regulations and consistency with licensee procedures. Training records for three technicians qualified to ship radioactive material were checked for completeness. In addition, training curricula provided to these workers were assessed.

During the week of November 4, 2002, the inspectors directly observed the preparation of outage equipment being transported as a Radioactive Material, Surface Contaminated Object, 7, UN2913, Fissile Excepted shipment. The inspectors assessed the technician's performance in completing the required paperwork via the RADMAN computer code and in conducting appropriate surveys of the loaded package.

Transportation program guidance and implementation were reviewed against regulations detailed in 10 CFR Part 71, 49 CFR Parts 170-189, and licensee

procedures. In addition, training activities were assessed against Subpart H of 49 CFR Part 172 and the guidance documented in NRC Bulletin 79-19.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

Licensee AR/NCR reports and self-assessments associated with radwaste processing and transportation were reviewed. The inspectors conducted a detailed review and evaluation of 11 NCRs and one self-assessment as listed in the Attachment. The inspectors assessed the licensee's ability to identify and resolve the identified issues.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below to verify the accuracy of reported PI data. PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 2, were used to verify the basis in reporting for each data element.

Barrier Integrity Cornerstone

- Reactor Coolant System Activity

The inspector reviewed laboratory analysis reports for routine sampling of the reactor coolant system (RCS) for RCS specific activity to verify that the licensee had adequately identified the maximum monthly RCS specific activity for the period January 2002 through November 2002. The maximum monthly values were compared to the numbers reported by the licensee for the PI during the applicable quarterly reporting period.

Mitigating Systems Cornerstone

- Heat Removal System Availability

The inspectors reviewed operating and equipment log entries, control room logs, maintenance rule logs, system engineer unavailability data, data reported to the NRC, and NCRs to verify that the licensee had adequately identified the unavailability for the AFW system for the period January 2002 through November 2002. The inspectors also

interviewed licensee personnel that were accountable for collecting and evaluating the data.

Emergency Preparedness Cornerstone

- Emergency Response Organization (ERO) Drill/Exercise Performance

The inspector assessed the accuracy of the PI for ERO drill and exercise performance (DEP) through review of a sample of drill records for the period October 2000 through September 2002. The latest reported DEP PI value (an aggregate of data from the past eight quarters) was 96.5 percent.

- ERO Drill Participation

The inspector assessed the accuracy of the PI for ERO drill participation through review of the training records for the 47 individuals assigned to key positions in the ERO for the period October 2000 through September 2002.. The latest reported ERO drill participation PI value was 93.8 percent.

- Alert and Notification System (ANS) Reliability

The inspector assessed the accuracy of the PI for the ANS reliability through review of a sample of the licensee's records of siren tests conducted during the period October 2000 through September 2002. The latest reported ANS reliability PI value was 99.5 percent.

Occupational and Public Radiation Safety Cornerstones

- Occupational Exposure Control Effectiveness
- Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual (RETS/ODCM) Radiological Effluent

The inspectors reviewed the Occupational Radiation Safety and Public Radiation Safety PIs for accuracy. To verify data submitted for the PIs, the inspectors interviewed various individuals for indications of PI related occurrences and reviewed licensee data including radiation protection log records and the effluent release program records for the period November 2001 through November 2002. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

(Closed) Licensee Event Report (LER) 50-261/2002-001-00, Four Main Steam Safety Valves Fail To Meet Acceptance Criteria During Lift Pressure Testing

During scheduled testing of the main steam safety valves (MSSVs) on October 9 and 10, the licensee determined that four of the 12 MSSVs had as-found lift pressures that exceeded the TS tolerance of +/- three percent. The licensee reset and satisfactorily retested the four OOS MSSVs within the allowed TS action statement completion time. The licensee also reviewed the design basis safety analyses and verified that the as-found setpoints would not have caused any safety limits to be exceeded. The root cause of the high lift pressures was attributed to mechanical component failure/degradation based on slight binding of the spindle on the guide bearing. Licensee corrective actions included replacement of the valve spindle and post-maintenance retesting. The LER was reviewed by the inspectors and no findings of significance were identified. The licensee documented the failed equipment in NCR 73940. This LER is closed.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/150, Reactor Pressure Vessel Head and Head Penetration Nozzles (NRC Bulletin 2002-02)

a. Inspection Scope

The inspectors observed activities relative to inspection of the reactor vessel head penetrations (VHPs) in response to NRC Bulletins 2001-01, 2002-01, and 2002-02. The inspection included review of nondestructive examination (NDE) procedures, assessment of NDE personnel training and qualification, and observation and assessment of visual (VT), ultrasonic (UT), and eddy current (ET) examinations. Discussions were also held with contractor representatives and other licensee personnel. The activities were examined to verify licensee compliance with regulatory requirements and gather information to help the NRC staff identify possible further regulatory positions and generic communications. Specifically, the inspectors reviewed or observed: (1) VT inspection using remote video of a sample of vessel head penetrations (VHP) for leakage; (2) in-process acquisition and analysis of Grooveman ET examination data of reactor vessel head CRDM nozzle outside diameter (OD) and J-Welds; (3) UT and ET open housing scanning analysis activities of the inside diameter (ID) of the nozzle for various CRDM penetrations; and (4) ET gapscan blade probe analysis activities of ID of the nozzle for various CRDM penetrations.

Additionally, the inspectors reviewed the plant specific information (head temperature and exposure) to verify that the correct inputs were used in the time-at-temperature model for determining RPV head susceptibility ranking.

b. Observations and Findings

1) Verification that the examinations were performed by qualified and knowledgeable personnel.

The inspectors found that visual and NDE inspections were being performed in accordance with approved and demonstrated procedures with trained and qualified inspection personnel. All examiners had significant experience, including experience inspecting VHPs.

2) Verification that the examinations were performed in accordance with approved procedures.

All 69 nozzles received remote Grooveman ET examination of the J-Weld surface in accordance with Procedures WDI-ET-002 and WDI-ET-004. These mechanized scans used a cross wound ET probe for axial and circumferential ET scanning of the J-groove weld and OD of the stub tube portion of the nozzles below the welds. The inspection area extended from approximately 1" above the bottom of the nozzle to approximately 2" into the cladding beyond the nozzle weld.

Procedures WDI-ET-008 and WDI-ET-004 were used for gapscan blade probe mechanical scanning technique. These mechanized scans used a blade type dual pancake differential pair of ET probes for axial and circumferential scanning of the nozzle ID from the gap between the thermal sleeve and the nozzle. The inspection area extended from approximately 1.5" above the lower end of the nozzle weld to approximately 1.5" above the highest point of the nozzle weld. The gapscan ET process was performed on 52 nozzles due to the presence of thermal sleeves which prevented open housing scanning of those nozzles.

Procedures WDI-ET-003, WDI-ET-004, WDI -UT-010 and WDI-UT -013 were used for open housing (7010) mechanical scanning. These mechanized scans used multichannel UT probes using pulse echo and time of flight diffraction ultrasonic techniques for scanning of the OD surface and a cross wound ET probe for axial and circumferential scanning of the ID surface of the nozzles. The inspection area extended from approximately 1.5" above the lower end of the nozzle weld to approximately 1.5" above the highest point of the nozzle weld. The open housing ET and UT process was performed on 17 nozzles due to the lack of thermal sleeves which would have prevented open housing scanning of those nozzles.

The inspectors reviewed the Westinghouse procedures and the licensee’s inspection plan developed for the VHP inspection. The inspectors noted that the approved acceptance criteria and/or critical parameters for VHP leakage were applied in accordance with the procedures.

3) Verification that the licensee was able to identify, disposition, and resolve deficiencies.

All signals considered to be potential crack indications were required to be reported for further inspection and disposition. Of the 69 penetrations inspected using ET examination, one penetration was determined to have a single shallow ID axial indication (< .06 inch deep). UT examination to verify depth of the indication was performed. The indication was evaluated against criteria in the Westinghouse Flaw Evaluation Handbook. The licensee determined that the indication was not characteristic of significant degradation. Although, the examination plan provided

specific follow-up actions for indications or deficiencies, no indications of leakage were identified during the visual examinations.

4) Verification that the licensee was capable of identifying the primary water stress corrosion cracking (PWSCC) phenomenon described in the bulletins.

The licensee performed NDE examinations on 100% of the CRDM nozzles during the outage. The inspection techniques had been previously demonstrated capable of detecting PWSCC type manufactured cracks as well as cracks from actual samples from another site.

5) Evaluate condition of the reactor vessel head (debris, insulation, dirt, boron from other sources, physical layout, viewing obstructions).

The inspectors noted that no significant examples of insulation, leakage sources, debris, or dirt, impeded the examination. The licensee was able to adequately view each of the 69 CRDM nozzles and the reactor head vent nozzle during the visual examinations.

6) Evaluate ability for small boron deposits, as described in NRC Bulletin 2001-01, to be identified and characterized.

The inspectors observed that there were small boron deposits and residue in the vicinity of twelve VHPs and verified that these deposits were documented in Procedure SP-1500, Visual Examination of RPV Head Penetration Nozzles. All deposits were loosely adherent and easily vacuumed from the head. The source of the boric acid residue was determined by the licensee to be from an existing canopy seal weld leak near these penetrations based on the location of the deposits and the loosely adherent nature and size of the particles.

7) Determine extent of material deficiencies (associated with the concerns identified in the three bulletins) which were identified that required repair.

No examples of VHP leakage or material deficiencies were identified during the visual or NDE examinations.

8) Determine any significant items that could impede effective examinations.

No significant items that could impede the examination process were noted during observation of the visual or NDE examinations.

.2 TI 2515/148, Appendix A, Pre-inspection Audit for Interim Compensatory Measures (ICMs) at Nuclear Power Plants

a. Inspection Scope (TI 2515/148)

The inspectors conducted an audit of the licensee's actions in response to a February 25, 2002, Order, which required the licensee to implement certain interim security compensatory measures. The audit consisted of a broad-scope review of the licensee's actions in response to the Order in the areas of operations, security,

emergency preparedness, and information technology. The inspectors selectively reviewed relevant documentation and procedures; directly observed equipment, personnel, and activities in progress; and discussed licensee actions with personnel responsible for development and implementation of the ICM actions.

The licensee's activities were reviewed against the requirements of the February 25, 2002, Order; the licensee's response to the Order; and the provisions of the NRC-endorsed NEI Implementation Guidance, dated July 24, 2002.

b. Findings

No findings of significance were identified. A more in-depth review of the licensee's implementation of the February 25, 2002, Order, will be conducted in the near future.

4OA6 Meetings, Including Exit

On December 20, 2002, the resident inspectors presented the inspection results to Mr. Chris Burton and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

R. Ivey , Operations Manager
E. Caba, Engineering Superintendent
D. Stoddard, Maintenance Manager
E. Rothe, Nuclear Assurance Section Manager
C. Burton, Director of Site Operations
R. Steele, Outage Management Manager
T. Cleary, Plant General Manager
W. Farmer, Engineering Superintendent
J. Fletcher, Regulatory Affairs Manager
S. Weise, Training Manager
J. Moyer, Vice President, Robinson Nuclear Plant
S. Young, Superintendent Security
D. Crook, Supervisor Access Authorization
A.G. Cheatham, Radiation Protection Superintendent
R. Howell, Supervisor, Regulatory Support

NRC personnel:

P. Fredrickson, Branch Chief, DRP, RII
M. Shannon, Acting Branch Chief, DRP, RII
G. MacDonald, Acting Branch Chief, DRP, RII
S. Mitra, License Renewal Project Manager, NRR
R. Emch, License Renewal Environmental Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-261/02-04-01	NCV	Failure to adequately implement procedure OPS-NGGC-1301, Equipment Clearances (Section 1R19)

Closed

50-261/TI 2515/150	TI	Reactor Pressure Vessel Head and Head Penetration Nozzles (NRC Bulletin 2002-02) (Section 40A5.1)
50-261/2002-001-00	LER	Four Main Steam Safety Valves Fail To Meet Acceptance Criteria During Lift Testing (Section 4OA3)

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

AP-015, Portable Heaters/Heating Devices
AP-008, Cold Weather Preparations
ITS Section 3.7
OP-925, Cold Weather Operation

Section 1R05: Fire Protection

UFSAR Section 9.5.1, 9.5.1A
OMM-002, Fire Protection Manual
FP-003, Control of Transient Combustibles

Section 1R06: Flood Protection Measures

SAM-8, Flood Containment
AOP-32, Response to Flooding From the Fire Protection System
AOP-22, Loss of Service Water

Sections 1R08 and 40A5: Inservice Inspection

Procedures:

Westinghouse Field Services Procedure WDI-ET-002, Introspect Eddy Current Analysis Inspection of J-Groove Welds in Reactor Vessel Head Penetrations
Westinghouse Field Services Procedure WDI-ET-003, Introspect Eddy Current Imaging Procedure for inspection of Reactor Vessel Head Penetrations
Westinghouse Field Services Procedure WDI-ET-004, Introspect Eddy Current Analysis Guidelines for Inspection of Reactor Vessel Head Penetrations
Westinghouse Field Services Procedure WDI-ET-008, Introspect Eddy Current Imaging Procedure for inspection of Reactor Vessel Head Penetrations with Gap Scanner
Westinghouse Field Services Procedure WDI-UT-010, Introspect Ultrasonic procedure for Inspection of Reactor Vessel Head Penetrations, Time of Flight Ultrasonic, Longitudinal Wave and Shear Wave
Westinghouse Field Services Procedure WDI-UT-013, CRDM UT Analysis Guidelines
Westinghouse Field Services Procedure WCAL-002, Pulsar/Receiver Linearity Procedure
H. B. Robinson Procedure PLP-114, Steam Generator Program
H. B. Robinson Procedure TMM-112, Steam Generator Inspection (Refueling Outage)
H. B. Robinson Procedure TMM-112-1, Steam Generator Eddy Current Analysis Guidelines
H. B. Robinson Procedure 83A6101, Liquid Penetrant Examination
H. B. Robinson Procedure 83A6061, Ultrasonic Examination of Reactor Coolant Pump Flywheels
H. B. Robinson Procedure 83A6211, Ultrasonic Examination of Ferritic Piping Welds and Vessels less than or equal to 2 inches
H. B. Robinson Procedure 83A6111, Magnetic Particle Examination

Action Requests

AR 30583, Unexpected residual boric acid found on reactor pressure vessel head while removing shielding during April 2001. Leakage due to canopy seal leaks on CRDM 68

Vendor Exam Evaluation Reports (VEs)

H. B. Robinson Reactor Vessel Head Penetration October 2002 J-Groove Weld and Tube OD Surface Eddy Current Inspection Results
H. B. Robinson Reactor Vessel Head Penetration October 2002 Open Housing Scanner and Gap Scanner Inspection Results

Other Documents

H. B. Robinson Nuclear Fuel Utilization Plan Extended to End of Life, dated July 16, 2001
H. B. Robinson Engineering Service Request (ESR) 9400866, Alloy 600 PWSCC Issue - RPV Head Indication at D. C. Cook
H. B. Robinson Letter Serial RNP-RA/02-0122 dated August 12, 2002, Reactor Vessel Head Inspection Plan for Refueling Outage 21
First Quarter 2002 Performance Evaluation Support (PES) Oversight Analysis Report 02-06-SP-C
Qualification and Training Records for NDE Examiners
H. B Steam Generator Degradation Assessment RFO-21 Pre-Outage Planning Report, SG-SCDA-0230, dated September 13, 2002

Section 1R11: Licensed Operator Requalification

Emergency Action Level Matrix
GP-007, Plant Cooldown from Hot Shutdown to Cold Shutdown
SD-003, Residual Heat Removal System

Section 1R12: Maintenance Rule Implementation

ADM-NGGC-0101, Maintenance Rule Program
RNP Maintenance Rule Database
Assessment Number 52331, Maintenance Rule (a)(3) Periodic Assessment, dated 4/26/02, assessment period 10/1/00-3/31/02
Assessment Number 15266, Maintenance Rule (a)(3) Periodic Assessment, dated 10/13/00, assessment period 6/1/99-10/30/00
Procedure ADM-NCGC-0101, Revision 14, Maintenance Rule Program
The Following Maintenance Rule Reports For CCW (4080), LHSI/RHR (2045), Steam Generator (3005) & SW (4060) Systems (Assessment Period 12/11/99 - 12/9/02)
- Maintenance Rule Performance Summary
- Maintenance Rule Event Log Report
- Maintenance Rule Scoping and Performance Criteria
- Maintenance Rule Unavailability Trend

Maintenance Rule (a)(1) Systems
Previous Maintenance Rule (a)(1) Systems

Next Failure Causes Functional Failure Exceedance
PMGs Approaching Unavailability Criteria
Maintenance Rule Functional Failures
Expert Panel Meeting Minutes (1/22/02, 3/27/02, 4/29/02, 6/17/02, 6/25/02, 8/15/02, 12/3/02)
Maintenance Rule WR Review Backlog
Maintenance Rule Action Items Needing EP Review
Maintenance Rule Unavailability Log Report (June 01 - December 12, 2002)
Archived Operator Logs (1/12/02 -11/12/02)
Condition Reports (NCRs)

55876	57015	57917	60477
60651	60644	61441	67053
69631	57917	62749	

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

OMM-48, Work Condition and Risk Assessment
OST-401-2, EDG B Slow Speed Start
OP-604, Diesel Generators A and B
NUMARC 93-01
OST-910, DSDG

Section 1R14: Personnel Performance During Non-Routine Plant Evolutions

WR- 186628
APP-003-F6 Annunciator Response Procedure

Section 1R15: Operability Evaluations

EGR NGGC-0005, Engineering Change
UFSAR Sections 3.10, 6.3, 8.3, 9.2.1, 15.0
Drawing G-19204A, 5379-1082
ASME, Section XI
EC 50570-000
AR 73940
Self-assessment report 52288
Work request 269192

Section 1R16: Operator Work-Arounds

OMM-001-8, Operator Work-Arounds

Section 1R19: Post Maintenance Testing

PLP-033, Post Maintenance Testing (PMT) Program
ITS 3.5.2, 3.4.6, 3.4.7, 3.4.8, 3.5.2, 3.5.3, 3.6.3, 3.9.4, 3.9.5, 5.5.8
H.B. Robinson Inservice Testing Database
FP-013, Fire Protection System Surveillance Requirements
OMM-015, Operations Surveillance Testing

ASME, Section XI

Section 1R20: Refueling and Outage Activities

Drawing 5379-1971
GP-009, Filling, Purification, and Draining of Refueling Cavity.
AOP-020, Loss of Residual Heat Removal
Drawing 5379-1082, 5379-14821
GP-002, Cold Shutdown to Hot Subcritical
GP-007, Plant Cool down from Hot Shutdown to Cold Shutdown
SD-003, Residual Heat Removal System
GP-001, Fill and Vent of the Reactor Coolant System

Section 1R22: Surveillance Testing

TMM-004, Inservice Testing Program
OP-604, Diesel Generators A and B
G-190204A, Emergency Diesel Generator Systems

Sections 1EP2 - 1EP5: Emergency Preparedness

Audits and Self-Assessments

RNAS 02-056 Emergency Preparedness Assessment R-EP-02-01 dated May 1, 2002
RNAS 01-083 Emergency Preparedness Assessment R-EP-01-01 dated July 25, 2001

Action Requests

Action Request Number: 43469
Action Request Number: 43473
Action Request Number: 43849

Section 2OS1: Access Control To Radiologically Significant Areas

Procedures:

Health Physics Procedure (HPP) -001, Radiologically Controlled Area Surveillance Program
HPP-006, Radiation Work Permits
HPP-500-3, Radiation Control Work Planning Process
PLP-016, Radiation Work Permit Program
Administrative Procedure (AP) -031, Administrative Controls for Entry Into Locked and Very High Radiation Areas
HPS-NGGC-0003, Radiological Posting, Labeling and Surveys

Radiation Work Permits (RWPs)

RWP 00000014 03, Miscellaneous Maintenance Activities
RWP 00000015 04, Pump, Valve, and Piping Repairs

RWP 00000023 01, Remove/Install Steam Generator Primary Manways and Diaphragms

Records and Data

HPP-001, Attachment 10.4, Weekly Survey Report for week ending 09/06/02
HPP-001, Attachment 10.9, Monthly Survey Report for August 2002
HPP-001, Attachment 10.12, Quarterly Survey Report for July 1-September 30, 2002
HPP-001, Attachment 10.15, Semi-Annual Survey Report for January 1-June 30, 2002

Self-Assessments and Action Request (AR)/Nuclear Condition Report (NCR) Documents

CAP-NGGC-0201 Self-Assessment Report No. 54029, RC Planning/RWP Implementation, conducted 03/18/02 - 04/08/02
AR/NCR 00051135, Evaluate Harris ED Alarm Event, 11/08/01
AR/NCR 00073841, LHRA Key Issuance, 10/09/02
AR/NCR 00074434, Door to B Bay Propped Open, 10/15/02
AR/NCR 00074525, A Pump Bay HRA Door Wired Open, 10/16/02
Significant AR 75805, Unauthorized Entry into the Top of the Cavity Spiral Staircase, 10/30/02

Section 2OS2: ALARA Planning and Controls

Procedures, Guidance Documents

Chemistry Procedure (CP), CP-010, Primary System Chemistry
Environmental and Radiation Control (ERC) Procedure ERC-003, Hot Spot Identification/ Elimination Procedure
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RO-21 Temporary Shielding, 02-0008
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Section 2PS2: Radioactive Material Processing and Transportation

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Health Physics Procedure (HPP) - 201 Radwaste Program
HPP-250 Utilization Of The Radlok High Density Cross-Linked Polyethylene High Integrity Containers
HPP-251, Dewatering Procedure for Radlok High Integrity Containers and Steel Liners With Resin
HPP-252, Spent Resin Transfer To Waste Processing Containers
HPP-255, Shipping And Receiving The IF-300 Cask
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ATG Procedure, STD-P-03-010, Transfer and De-watering Bead Resin In ATG, INC. High Integrity Containers With A Single Layer Under-drain Assembly To Less Than 1% Drainable Liquid

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Radiation Control Technician Qualification Checkout Card OJT/TPE

Waste Stream/Package Characterization

Radwaste\Radioactive Material Packaging
Spent Fuel Shipments
Receipt of the IF-300 Cask
Loading Radwaste

Radioactive Material Shipping Papers

Shipment ID 02-0021, 06/07/02, Radioactive Material, Fissile, n.o.s., 7, UN2918, RQ
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Shipment ID 02-0051, Radioactive Material, LSA, n.o.s., 7, UN2912, Fissile Excepted, De-watered Filters
Shipment ID 02-0065, 10/30/02, Radioactive Material, Surface Contaminated Object, 7, UN2913, Fissile Excepted, Outage Equipment (4 Boxes)
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NCR 57966, Consider Revising HPP-251, De-watering Procedure for Radlok High Integrity Containers and Steel Liners With Resin, To Have Plant Radwaste Personnel Sign-off the De-watering Data Sheet, Instead of the Contractor, 06/26/02
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Section 4OA1: Performance Indicator Verification

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