



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

January 27, 2009

Carolina Power and Light Company
ATTN: Mr. Eric McCartney
Vice President - Robinson Plant
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 05000261/2008005

Dear Mr. McCartney:

On December 31, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your H.B. Robinson reactor facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 13, 2009, with you 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. On the basis of the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 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> <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,
/RA/

Randall A. Musser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000261/2008005
w/Attachment: Supplemental Information
cc w/encl: (See page 3)

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Letter to Eric McCartney from Randall A. Musser dated January 27, 2009

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED
INSPECTION REPORT 05000261/2008005

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-261

License No: DPR-23

Report No: 005000261/2008005

Facility: H. B. Robinson Steam Electric Plant, Unit 2

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: October 1, 2008 – December 31, 2008

Inspectors: R. Hagar, Senior Resident Inspector
L. Lake, Senior Reactor Inspector (Section 1R08)
E. Morris, Resident Inspector
M. Chitty, Resident Inspector
R. Carrion, Senior Reactor Inspector (Section 4OA5.2)

Approved by: R. Musser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000261/2008-005, 10/01/2008 - 12/31/2008; H.B. Robinson Steam Electric Plant, Unit 2; Routine Integrated Report.

The report covered a three month period of inspection by resident inspectors and an announced inspection by a senior reactor inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated July 2006.

No findings were identified during this inspection period.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

None.

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REPORT DETAILS

Summary of Plant Status The unit began the inspection period in a refueling outage. On November 7, the licensee restarted the reactor and synchronized the unit to the grid. On November 11, the unit achieved rated thermal power. On November 17, after the main turbine generator shaft experienced unusually high levels of vibration, the licensee began a downpower from full power, and then manually tripped the reactor from 78 percent, after turbine vibration amplitude reached the trip setpoint. The unit remained in a forced outage to repair the main turbine bearings until December 1, when the unit was restarted and synchronized to the grid. The unit achieved rated thermal power on December 2. On December 20, the unit was shutdown to operational mode 2 to perform further maintenance on the main turbine bearings. The unit was returned to full power on December 21, and operated at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

After the licensee completed preparations for seasonal low temperature, the inspectors walked down the main steam and refueling water storage systems. These systems were selected because their safety related functions could be affected by adverse weather. The inspectors reviewed documents listed in the Attachment, observed plant conditions, and evaluated those conditions using criteria documented in Procedure AP-008, Cold Weather Preparations, Rev. 17.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns:

The inspectors performed the following three partial system walkdowns, while the indicated structures, systems, and/or components (SSCs) were out-of-service for maintenance and testing:

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<u>System Walked Down</u>	<u>SSC Out of Service</u>	<u>Date Inspected</u>
Dedicated shutdown diesel generator	(not applicable)	December 11
Emergency diesel generator B	Emergency diesel generator A	December 16
Instrument air compressor D	Primary instrument air compressor	December 22

To evaluate the operability of the selected trains or systems under these conditions, the inspectors compared observed positions of valves, switches, and electrical power breakers to the procedures and drawings listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

For the six areas identified below, the inspectors reviewed the control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures to verify that those items were consistent with Updated Final Safety Analysis Report (UFSAR) Section 9.5.1, Fire Protection System, and UFSAR Appendix 9.5.A, Fire Hazards Analysis. The inspectors walked down accessible portions of each area and reviewed results from related surveillance tests to verify that conditions in these areas were consistent with descriptions of the areas in the UFSAR. Documents reviewed are listed in the Attachment.

The following areas were inspected:

<u>Fire Zone</u>	<u>Description</u>
2	emergency diesel generator A room
16	station battery room
25F&G	turbine building
25D	dedicated-shutdown diesel generator
7	auxiliary building hallway (ground floor)
29	service water pump area

The inspectors reviewed the following work requests and action request (AR) associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

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- work request 347558, Infrared detector for 1A1 (Zone 1) failed to actuate
- work request 347559, Infrared detector for 1B2 (Zone 1) failed to actuate
- work request 347560, Zone 2 inhibit switch improper response when in inhibit
- work request 349851, old infrared generating device does not work
- AR 293061, Zone 1 (B diesel room) flame detectors did not actuate

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities (IP 71111.08P, Unit 2)

.1 Non-Destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

From October 6 - 10, 2008, the inspectors reviewed the implementation of the licensee's In-service Inspection (ISI) program for monitoring degradation of the reactor coolant system (RCS) boundary and risk significant piping boundaries. The inspectors' activities consisted of an on-site review of NDE and welding activities to evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI (Code of record: 1995 Edition through the 1996 Addenda), and to verify that indications and defects (if present) were appropriately evaluated and dispositioned in accordance with the requirements of the ASME Code, Section XI acceptance standards.

The inspectors' review of NDE activities specifically covered examination procedures, NDE reports, equipment and consumables certification records, personnel qualification records, and calibration reports (as applicable) for the following examinations:

- UT examination of weld 16-FW-10A, ASME Class 2, Feed Water System, 16-inch diameter pipe.
- MT examination of weld 16-FW-8B, ASME Class 2, Feed Water System, 16-inch diameter pipe.
- VT-3 examination on support SI-4-6013, ASME Class 2, Safety Injection System, 4 inch pipe to valve weld.

The inspectors also reviewed documentation for the following indications, which were accepted for continuous service:

- VT-3 visual examination of support SI-4-6013 on the Safety Injection System

The inspectors' review of welding activities specifically covered the welding activity listed below in order to evaluate compliance with procedures and the ASME Code. The inspectors reviewed the work order, repair and replacement plan, weld data sheets,

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welding procedures, procedure qualification records, welder qualification records, and NDE reports.

- Welding Package for CVC-239A (Class 2) associated with Work Order # 774377, Pipe to Valve Weld.

b. Findings

No findings of significance were identified.

.2 PWR Vessel Upper Head Penetration (VUHP) Inspection Activities

a. Inspection Scope

The reactor vessel upper head was replaced in August 2005. Inspections during this outage consisted of visual (VT-2) examinations conducted above the reactor pressure vessel upper head to identify potential boric acid leaks from pressure-retaining components. Inspectors reviewed the licensee's activities to verify licensee compliance with the regulatory requirements of NRC Order EA-03-009. The inspectors specifically reviewed examination procedures, personnel training and qualification records, reports for the visual inspection of pressure retaining components above the head performed every outage.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC) Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's BACC program activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary," and applicable industry guidance documents. Specifically, the inspectors performed an on-site record review of procedures and the results of the licensee's containment walk-down inspections performed during the Unit 1 fall 2008 outage. The inspectors also interviewed the BACC program owner and conducted an independent walk-down of the reactor building to evaluate compliance with licensee's BACC program requirements and verify that degraded or non-conforming conditions, such as boric acid leaks identified during the containment walk-down, were properly identified and corrected in accordance with the licensee's BACC and Corrective Action Programs.

The inspectors reviewed a sample of engineering evaluations completed for evidence of boric acid found on systems containing borated water to verify that the minimum design code required section thickness had been maintained for the affected components. The inspectors selected the following evaluations for review:

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- AR 248014 – CVC 349E has corrosion on casing bolt.
- AR 287401 – Brown Boric Acid (Brown and white) identified on BA-TNK-A-HTR-A upper flange.

b. Findings

No findings of significance were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

Examinations were last performed in the spring of 2007. Results of these examinations met acceptance criteria. No examinations were required to be scheduled this outage.

b. Findings

Not applicable.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems, including welding, BACC, and that were identified by the licensee and entered into the corrective action program as Action Requests. The inspectors reviewed the ARs to confirm that the licensee had appropriately described the scope of the problem and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the report attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification

a. Inspection Scope

The inspectors observed licensed-operator performance during requalification simulator training for crew 1 to verify that operator performance was consistent with expected operator performance, as described in Exercise Guide LOCT 08-3, Rev. 3. This training tested the operators' ability to operate components from the control room, direct auxiliary operator actions, and determine the appropriate emergency action level classifications while responding to a rupture of a reactor coolant pump thermal barrier heat exchanger

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followed by failure of reactor coolant pump seals resulting in a small-break loss-of-coolant accident. The inspectors focused on clarity and formality of communication, the use of procedures, alarm response, control board manipulations, group dynamics, and supervisory oversight. Documents reviewed are listed in the Attachment.

The inspectors observed the post-exercise critique to verify that the licensee identified deficiencies and discrepancies that occurred during the simulator training.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two degraded SSC/function performance problems or conditions listed below to verify the appropriate handling of these performance problems or conditions in accordance with 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, and 10 CFR 50.65, Maintenance Rule. Documents reviewed are listed in the Attachment.

The problems/conditions and their corresponding ARs were:

<u>Performance Problem/Condition</u>	<u>AR</u>
Failure of a temperature indicator on a water-cooled cooling unit for control-room ventilation	286075
[containment pressure relief valves] V12-10 & V12-11 failed to close on a simulated high signal from containment radiation monitors	095470

During the reviews, the inspectors focused on the following:

- Appropriate work practices,
- Identifying and addressing common cause failures,
- Scoping in accordance with 10 CFR 50.65(b),
- Characterizing reliability issues (performance),
- Charging unavailability (performance),
- Trending key parameters (condition monitoring),
- 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification, and
- Appropriateness of performance criteria for SSCs/functions classified (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified (a)(1).

b. Findings

No findings of significance were identified.

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1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

For the five time periods listed below, the inspectors reviewed risk assessments and related activities to verify that the licensee performed adequate risk assessments and implemented appropriate risk-management actions when required by 10 CFR 50.65(a)(4). For emergent work, the inspectors also verified that any increase in risk was promptly assessed, and that appropriate risk-management actions were promptly implemented. Documents reviewed are listed in the Attachment. Those periods included the following:

- November 8 – November 14, including plant startup from a refueling outage
- December 1 – December 2, including power ascension following plant startup from an unscheduled outage and repairs affecting the train A boric acid transfer pump
- December 5 – December 11, including several scheduled high-risk surveillance tests and emergent thunderstorm activity in the area
- December 13 – December 19, including scheduled maintenance on the A emergency diesel generator
- December 20 – December 26, including a shutdown for a maintenance outage and a return to full power

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the four operability determinations associated with the ARs listed below. The inspectors assessed the accuracy of the evaluations, the use and control of any necessary compensatory measures, and compliance with the Technical Specification (TS). The inspectors verified that the operability determinations were made as specified by Procedure OPS-NGGC-1305, Operability Determinations. The inspectors compared the justifications provided in the determinations to the requirements from the TS, the UFSAR, and associated design-basis documents, to verify that operability was properly justified and the subject components or systems remained available, such that no unrecognized increase in risk occurred:

- AR 306241, Trip Of [Service Water Booster Pump] "B" During [Surveillance Test] OST-303-2, Service Water Booster Pump B Test

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- AR 301890, SW [Service Water]-876 weld leak creating inoperable [Control Room Emergency Temperature Control System] TS 3.7.10
- AR 310974, Emergency diesel generator A latching spring broken
- AR 311738, Broken bolt found on the A emergency diesel generator blower outlet flange

Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the six post-maintenance tests listed below, the inspectors witnessed the test and/or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety functions described in the UFSAR and TS. Documents reviewed are listed in the Attachment.

The following tests were witnessed/reviewed:

<u>Test Procedure</u>	<u>Title</u>	<u>Related Maintenance Activity</u>	<u>Date Inspected</u>
OST-409-2	[Emergency Diesel Generator] "B" Fast Speed Start	Replace the generator's voltage regulator card	October 19
OST-207 Sections 8.1, 8.2, & 8.3	Comprehensive Flow Test for the Motor Driven Auxiliary Feedwater Pumps	Inspection of steam generator isolation valves V2-16A, V2-16B, and V2-16C	October 25
OP-601	[Direct Current] Supply System	Battery charger B-1 breaker K6 relay replacement	October 31
OST-302-2	Service Water Pumps C & D Inservice Test	Internal inspection of north service water supply check valve, SW-541	October 31

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OST-207 Sections 8.10, 8.11, & 8.12	Comprehensive Flow Test for the Motor Driven Auxiliary Feedwater Pumps	Maintenance on check valves in the auxiliary feedwater system	November 2
OST-409-1	[Emergency Diesel Generator] "A" Fast Speed Start	Replace tube bundles in the lube oil heat exchanger and the jacket water heat exchanger	December 18

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR 296010, Fire water jockey pump tripped during post-maintenance test run

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

.1 Refueling Outage 25

For the refueling outage that began on September 27 and ended on November 7, the inspectors evaluated licensee outage activities as described below to verify that the licensee considered risk in developing outage schedules, adhered to administrative risk reduction methodologies they developed to control plant configuration, and adhered to operating license and technical specification requirements that maintained defense-in-depth. The inspectors also verified that the licensee developed mitigation strategies for losses of the following key safety functions:

- decay heat removal
- inventory control
- power availability
- reactivity control
- containment

Documents reviewed are listed in the Attachment.

The following specific areas were reviewed during the inspection period:

Licensee Control of Outage Activities

During the outage, the inspectors observed the items or activities described below to verify that the licensee maintained defense-in-depth commensurate with the outage risk-control plan for key safety functions and applicable technical specifications when taking equipment out of service.

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- Clearance Activities
- Reactor Coolant System Instrumentation
- Electrical Power
- Decay Heat Removal (DHR)
- Spent Fuel Pool Cooling
- Inventory Control
- Reactivity Control
- Containment Closure

The inspectors also reviewed responses to emergent work and unexpected conditions to verify that resulting configuration changes were controlled in accordance with the outage risk control plan, and to verify that control-room operators were kept cognizant of the plant configuration.

Refueling Activities

The inspectors observed fuel handling operations (removal, inspection, and insertion) and other ongoing activities to verify that those operations and activities were being performed in accordance with technical specifications and approved procedures. Also, the inspectors observed refueling activities to verify that the location of the fuel assemblies, including new fuel, was tracked from core offload through core reload.

Monitoring of Heatup and Startup Activities

Prior to mode changes and on a sampling basis, the inspectors reviewed system lineups and/or control board indications to verify that TSs, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations. Also, the inspectors periodically reviewed RCS boundary leakage data, and observed the setting of containment integrity to verify that the RCS and containment boundaries were in place and had integrity when necessary. Prior to reactor startup, the inspectors walked down containment to verify that debris had not been left which could affect performance of the containment sumps. The inspectors reviewed reactor physics testing results to verify that core operating limit parameters were consistent with the design.

Identification and Resolution of Problems

Periodically, the inspectors reviewed the items that had been entered into the Corrective Action Program (CAP) to verify that the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program.

Findings

No findings of significance were identified.

.2 Forced Outage 226F1

For the forced outage that began on November 17 and ended on December 1, the inspectors evaluated licensee outage activities as described below to verify that licensee considered risk in developing outage schedules, adhered to administrative risk reduction methodologies they developed to control plant configuration, and adhered to operating license and technical specification requirements that maintained defense-in-depth.

Documents reviewed are listed in the Attachment.

The following specific areas were reviewed during the inspection period:

Licensee Control of Outage Activities

During the outage, the inspectors observed the items or activities described below to verify that the licensee maintained defense-in-depth commensurate with the outage risk-control plan for key safety functions and applicable technical specifications when taking equipment out of service.

- Clearance Activities
- Decay Heat Removal
- Inventory Control
- Reactivity Control

The inspectors also reviewed responses to emergent work and unexpected conditions to verify that resulting configuration changes were controlled in accordance with the outage risk control plan, and to verify that control-room operators were kept cognizant of the plant configuration.

Monitoring of Heatup and Startup Activities

Prior to mode changes and on a sampling basis, the inspectors reviewed system lineups and/or control board indications to verify that TSs, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations. Also, the inspectors periodically reviewed RCS boundary leakage data, and observed the setting of containment integrity to verify that the RCS and containment boundaries were in place and had integrity when necessary.

Identification and Resolution of Problems

Periodically, the inspectors reviewed the items that had been entered into the CAP to verify that the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program.

Findings

No findings of significance were identified.

Enclosure

.3 Maintenance Outage 226M1

For the maintenance outage that began on December 20 and ended on December 21, the inspectors evaluated licensee outage activities as described below to verify that licensee considered risk in developing outage schedules, adhered to administrative risk reduction methodologies they developed to control plant configuration, and adhered to operating license and technical specification requirements that maintained defense-in-depth.

Documents reviewed are listed in the Attachment.

The following specific areas were reviewed during the inspection period:

Licensee Control of Outage Activities

During the outage, the inspectors observed the items or activities described below to verify that the licensee maintained defense-in-depth commensurate with the outage risk-control plan for key safety functions and applicable technical specifications when taking equipment out of service.

- Clearance Activities
- Decay Heat Removal
- Inventory Control
- Reactivity Control

The inspectors also reviewed responses to emergent work and unexpected conditions to verify that resulting configuration changes were controlled in accordance with the outage risk control plan, and to verify that control-room operators were kept cognizant of the plant configuration.

Monitoring of Heatup and Startup Activities

Prior to mode changes and on a sampling basis, the inspectors reviewed system lineups and/or control board indications to verify that TSs, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations. Also, the inspectors periodically reviewed RCS boundary leakage data, and observed the setting of containment integrity to verify that the RCS and containment boundaries were in place and had integrity when necessary.

Identification and Resolution of Problems

Periodically, the inspectors reviewed the items that had been entered into the CAP to verify that the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program.

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Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the seven surveillance tests listed below, the inspectors witnessed testing and/or reviewed the test data to verify that the systems, structures, and components involved in these tests satisfied the requirements described in the TS, the UFSAR, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions. Documents reviewed are listed in the Attachment.

<u>Test Procedure</u>	<u>Title</u>	<u>Date Inspected</u>
OST-154*	Safety Injection System High Head Check Valve Test	October 4
OST-933-27**	Penetration 19, CCW Return From [reactor coolant pumps] (CC-730) Leakage Test (As Required and Every 18 Months)	October 17
OST-253*	Comprehensive Flow Test for the [Residual Heat Removal] Pumps	October 22
OST-411	Emergency Diesel Generator "B" (Twenty-Four Hour Load Test)	October 24
EST-137-5**	Local Leak Rate Test of Purge Exhaust Valves (Refueling Shutdown or Other Convenient Interval Not To Exceed 2 Years)	October 28
OST-163	Safety Injection Test and Emergency Diesel Auto Start on Loss of Power and Safety Injection (Refueling)	October 28-29
OST-407	Verification of Component Response to Blackout Sequence	October 29

* This procedure included inservice testing requirements.

** This procedure included testing of a containment isolation valve.

The inspectors reviewed the following Work Orders (WOs) and AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

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- WO 1439851, [Containment isolation valve] RC-553 did not fully close during OST-163
- WO 1440102, Battery charger B-1 failed to trip during OST-163
- WO 1440092, Pin-hole leak on weld at elbow to ["A" auxiliary feedwater pump recirculation isolation valve] AFW-110
- AR 303364, Containment purge exhaust valves V12-8 and V12-9 excessive leakage during EST-175-5

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

On December 8, the inspectors observed an emergency preparedness drill to verify licensee self-assessment of classification, notification, and protective action recommendation development in accordance with 10 CFR 50, Appendix E. The inspectors also attended the post-drill critique to verify that the licensee properly identified failures in classification, notification and protective action recommendation development activities. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Routine Review of ARs

To aid in the identification of repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed frequent screenings of items entered into the CAP. The review was accomplished by reviewing daily AR reports.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected AR 193846, [Integrated Technical Specifications] entered due to B and C [component coolant water] pumps out of service, for detailed review. The inspectors selected this AR because it relates specifically to the Mitigating Systems Cornerstone. The inspectors reviewed this report to verify:

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- complete and accurate identification of the problem in a timely manner;
- evaluation and disposition of performance issues;
- evaluation and disposition of operability and reportability issues;
- consideration of extent of condition, generic implications, common cause, and previous occurrences;
- appropriate classification and prioritization of the problem;
- identification of root and contributing causes of the problem;
- identification of corrective actions which were appropriately focused to correct the problem; and
- completion of corrective actions in a timely manner.

The inspectors also reviewed this AR to verify compliance with the requirements of the CAP as delineated in Procedure CAP-NGGC-0200, CAP, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

b. Observations and Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspector's review focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 40A2.1, licensee trending efforts, and licensee human performance results. The inspector's review nominally considered the six month period of July 2008 through December 2008, although some examples expanded beyond those dates when the scope of the trend warranted. The review included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the latest monthly and quarterly trend reports. Corrective actions associated with a sample of the issues identified in the trend reports were reviewed for adequacy. The specific documents reviewed are listed in the Attachment.

The inspectors also evaluated the trend reports against the requirements of the CAP as specified in 10 CFR 50, Appendix B, Criterion XVI, and in Procedures CAP-NGGC-0200, Corrective Action Program, and CAP-NGGC-0206, Corrective Action Program Trending and Analysis.

b. Assessment and Observations

No findings of significance were identified. The inspectors evaluated trending methodology and observed that the licensee had performed a detailed review.

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The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in their CAP data. The inspectors compared the licensee process results with the results of the inspectors' daily screening, and did not identify any discrepancies or potential trends in the CAP data that the licensee had failed to identify.

4OA3 Event Follow-up

.1 November 17 Reactor Trip

a. Inspection Scope

Following the reactor trip that occurred on November 17, the inspectors reviewed the status of mitigating systems and fission product barriers, equipment and personnel performance, and related plant management decisions to assist NRC management in making an informed evaluation of plant conditions. The inspectors also reviewed post-trip activities to verify that the licensee identified and resolved event-related issues prior to restarting the plant. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 (Open) NRC Temporary Instruction (TI) 2515/172, Reactor Coolant System Dissimilar Metal Butt Welds (DMBW)

a. Inspection Scope

From November 17-21, 2008, the inspector reviewed the licensee's activities related to the inspection and mitigation of dissimilar metal butt welds in the Reactor Coolant System (RCS) to ensure that the licensee's activities were consistent with industry requirements established in the Materials and Reliability Program (MRP) document MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines," July 2005.

The inspector reviewed correspondence and supporting documentation with the NRC with respect to materials used in the fabrication of the Unit 2 pressurizer penetrations and other components of the reactor coolant system. Inspection activities covered the following: a) documentation review of Unit 2 pressurizer surge nozzle, spray nozzle, safety nozzles, and relief nozzle, b) documentation review of the volumetric examination of the Unit 2 reactor vessel hot- and cold-leg nozzles, c) documentation review of the Unit 2 steam generator hot- and cold-leg nozzles, and d) review of MRP-139 program documentation.

b. Findings and Observations

No findings of significance were identified.

MRP-139 Baseline Inspections

- 1) Have the baseline inspections been performed or are they scheduled to be performed in accordance with MRP-139 guidance?

Yes, all baseline volumetric inspection activities required to be completed per MRP-139 Section 1.2 at the time of this report have been completed. The inspector noted that the licensee had determined that there were no Alloy 82/182/600 materials used in the fabrication of any of the pressurizer penetrations via a 60-day response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors." Therefore, no baseline inspections were required or performed on these welds. The inspector reviewed pressurizer documentation to verify the fabrication data. The documents reviewed are included in the list provided at the end of the report.

The reactor vessel inlet and outlet nozzles are forgings of SA-336 material with SA-182 Type 316 safe ends. The filler material used for buttering the nozzles and welding on the safe ends is INCO 82/182 (Alloy 600). The licensee conducted phased array ultrasonic and eddy current examinations from the inner diameter surface of these nozzles during refueling outage RO25 in October 2008.

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Although some indications were identified, evaluations of the indications determined that they met the acceptance criteria of Section IX of the ASME Code.

The inspector noted that the licensee had received on-site assistance from the Electrical Power Research Institute (EPRI) for these examinations and evaluations.

There are no dissimilar metal welds in the steam generator hot leg or cold leg piping.

- 2) Is the licensee planning to take any deviations from MRP-139 requirements?
No, the licensee has not submitted any requests for deviation from MRP-139 requirements.

Volumetric Examinations

- 1) For each examination inspected, was the activity performed in accordance with the examination guidelines in MRP-139, Section 5.1, for unmitigated welds or mechanical stress improved welds and consistent with NRC staff relief request authorization for overlaid welds?

Yes, the volumetric examination of the Unit 2 reactor vessel's nozzles was performed from the inner diameter using a phased array ultrasonic test (UT) procedure (ISwT-PDI-AUT11, Revision 1, Change 0), which was qualified in accordance with ASME Section XI, Appendix VIII, as implemented by the EPRI Performance Demonstration Initiative (PDI) Program, for the detection and length sizing of inner diameter (ID) connected flaws from the inside surface. In addition, the licensee used eddy current testing to verify that indications were not ID connected. Procedure ISwT-PDI-AUT12, Revision 0, Change 0) was utilized for depth sizing indications. Although ISwT-PDI-AUT12 is not PDI-qualified for depth sizing, it has been demonstrated through the PDI program for certain flaw depth sizing capabilities. This procedure is not qualified because the overall performance for dissimilar metal weld applications did not satisfy the ASME Section XI, Appendix VIII acceptance criteria, which requires an overall error of less than or equal to 0.125" RMS. However, the NRC approved a relief request for using a root mean square (RMS) error criterion of 0.212-inch for flaw depth sizing of indications, via NRR letter to the licensee, dated October 22, 2008.

- 2) For each examination inspected, was the activity performed by qualified personnel?

Unit 2 Reactor Vessel Nozzles

Yes, personnel involved in the UT examinations of the Unit 2 reactor vessel nozzles were qualified in accordance with MRP-139 requirements. The examiners were qualified UT Level II as required by the UT procedure and in

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accordance with the vendor's written practice for NDE personnel. The UT examiners were also PDI-qualified for the specific UT procedure they implemented. The final examination report was compiled by EPRI.

- 3) For each examination inspected, was the activity performed such that deficiencies were identified, dispositioned, and resolved?

Unit 2 Reactor Vessel Nozzles

Yes, the inspectors reviewed documentation and conducted interviews with plant personnel to verify that deficiencies were identified, dispositioned, and resolved. Based on the inspection activities, the inspector determined that the examination was conducted in a manner such that deficiencies were identified, dispositioned, and resolved.

Weld Overlays (Not Applicable)

The licensee has not implemented weld overlays as a mitigation method for DMBWs.

Mechanical Stress Improvement (Not Applicable)

The licensee has not implemented Mechanical Stress Improvement as a mitigation method for DMBWs.

In-service Inspection Program

- 1) Has the licensee prepared an MRP-139 in-service inspection program?

Yes, the licensee had a stand-alone MRP-139 in-service inspection program document which included all PWRs in its fleet. The licensee incorporated MRP-139 program requirements into the Progress Energy Nuclear Generation Group Alloy 600 Strategic Plan, Revision 1a. The inspectors reviewed the plan as it related to the Robinson plant and interviewed appropriate licensee representatives.

- 2) Are welds appropriately categorized?

The inspectors reviewed all welds categorized at the time of the inspection for appropriate categorization in accordance with MRP-139, Section 6. The welds were appropriately categorized.

- 3) Are inspection frequencies consistent with the requirements of MRP-139?

Yes, planned inspection frequencies for welds in the MRP-139 program are consistent with the requirements of MRP-139.

- 4) What is the licensees' basis for categorizing welds as H or I and plans for addressing potential PWSCC?

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No welds were categorized as Categories H or I because they can be volumetrically inspected. Potential PWSCC will be addressed by the licensee's MRP-139 inspection program.

- 5) What deviations have the licensee incorporated and what approval process was used?

No deviations to MRP-139 have been incorporated by the licensee; therefore, no approval was necessary.

4OA6 Meetings, Including Exit

On January 13, 2009, the inspectors presented the overall inspection results to Eric McCartney and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

C. Baucom, Manager, Support Services – Nuclear
M. Blew, Robinson Engineering Section
C. Castell, Supervisor of Licensing
W. Farmer, Engineering Manager
S. George, Supervisor of Self-Evaluations
J. Huegel, Maintenance Manager
T. Huminski, Robinson Engineering Section
K. Jones, Operations Manager
E. Kapopoulos, Plant General Manager
J. Lucas, Nuclear Assurance Manager
D. Martrano, Supervisor of Engineering Programs
E. McCartney, Vice President
J. Rhodes, Radiation Protection Superintendent
G. Sanders, Licensing Engineer
J. Sanders, Plant Welding Engineer
K. Smith, Manager of Training
T. Walt, Vice President
S. West, Manager of Robinson Nuclear Plant Security
S. Wheeler, Supervisor, Plant Support

NRC personnel

R. Musser, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

2515/172	TI	Reactor Coolant System Dissimilar Metal Butt Welds (DMBWS)
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Closed

None

Opened & Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

1R01 Adverse Weather Protection

Procedures

AP-008, Cold Weather Preparations, Rev. 17
OP-925, Cold Weather Operation, Rev. 42
EDP-009, Freeze Protection Panels, Rev. 33
PM-076, Electric Unit Heaters and Steam Unit Heaters, Rev. 9
AP-015, Portable Heaters/Heating Devices, Rev. 15

Work Orders

01159336-01 which implemented AP-008
01136713-01 which implemented AP-008
results from OP-925, attachment 10.3, Inside AO evaporative air cooler isolation, Rev. 41, dated 11/09/08
results from OP-925, attachment 10.7, Outside AO instrument air line moisture check, Rev. 41, dated 10/29/08

1R04 Equipment Alignment

Partial System Walkdown

Procedures

OP-602, Dedicated Shutdown System, Rev. 47
OP-604, Diesel Generators A & B, Section 8.4.8, Rev. 76
OP-905, Instrument & Station Air System, Rev. 99
TMM-034, Emergency Diesel Generator Reliability Program, Rev. 10
Results from OST-910, Dedicated Shutdown Diesel Generator (monthly), dated 11/13/08

Drawings

G-190200, Instrument & Station Air System Flow Diagram, Sht. 2 Rev. 33, Sht. 3 Rev. 35, Sht. 4 Rev. 23, Sht. 10 Rev. 12
G-190204D SH00001, Fuel Oil System Flow diagram, Rev. 017
HBR2-08679 SH00001 & SH00002, (Dedicated Shutdown) Emergency Diesel Generator System Flow Diagram, Rev. 1

Other

Clearance order 183233, [Dedicated Shutdown] Fuel Oil Tank Sight Glass, dated 12/11/08
UFASR section 3.1.2.24, Emergency Power for Protection Systems
UFASR section 9.3.1, Station and Instrument Air Systems

1R05 Fire Protection

UFSAR Sections of Appendix 9.5.1A

3.1.2 Appendix R fire area A2 (fire zone 2) – diesel generator A room
3.1.3.2 Fire zone 7 – auxiliary building hallway (ground floor)
3.1.5.2 Fire zone 16 – battery room
3.7.4 Fire zone 25D – dedicated shutdown diesel generator

- 3.7.5 Fire zone 25E – turbine building east mezzanine
- 3.7.6 Fire zone 25F – turbine building west mezzanine
- 3.7.7 Fire zone 25G – turbine building operating deck
- 3.9.1 Fire zone 29 – service water pump area

Procedures

results from OST-611-1, low voltage fire detection and actuation systems zones 1 and 2 (semi-annual), Rev.6 dated 8/23/08

results from partial completion of OST-611-1, Low voltage fire detection and actuation systems zones 1 and 2 (semi-annual), Rev.6 dated 8/23/08

results from OST-611-3, low voltage fire detection and actuation system zones 6 and 7 (semi-annual), Rev.3 dated 9/8/08

results from OST-621, diesel generator CO2 system cylinder weight test (semi-annual), Rev. 24 dated 8/18/08

results from OMM-007, attachment 10.2, equipment inoperable report – fire detection and actuation system, Rev. 76 dated 8/23/08

results from OST-611-10, low voltage fire detection and actuation system zones 16, 17, 18, 29, and 30, Rev. 8 dated 6/15/08

results from OST-611-645, turbine lube oil deluge system flow test (annual), Rev. 17 dated 4/18/08

results from OST-609, inspection and flushing of the interior fire hose stations (annually), Rev. 28 dated 05/14/08

results from OST-611-6, low voltage fire detection and actuation system zone 11 & 13 (semi-annual), Rev. 5 dated 06/30/08 [attachment 10.1 contains checks for detector and pull station locations for the auxiliary building first floor north hallway]

results from OST-611-7, low voltage fire detection and actuation system zone 12 (semi-annual), Rev. 3 dated 06/09/08 [attachment 10.1 contains checks for detector and pull station locations for the auxiliary building first floor center hallway]

results from OST-624, fire damper inspection (18 month), Rev. 12 dated 11/12/08

results from OST-633, interior fire hose hydrostatic test, Rev. 13 dated 10/02/08

FP-12, fire protection systems minimum equipment and compensatory actions, Rev. 12

FP-013, fire protection systems surveillance requirements, Rev. 10

Drawings

HBR2-9717, fire area/zone locations, sheet 1 Rev. 3, sheet 2 Rev. 5, and sheet 4 Rev. 4

HBR2-8319, fire damper, sheet 1 Rev. 1

HBR2-7448 (5137-M-2001), heating ventilating and air conditioning reactor auxiliary building ground floor plan, sheet 1 Rev. 3

Other documents

operator shift logs from 8/23/08 to 8/24/08

fire protection auxiliary operator log for the week of 12/06/08

equipment inoperability record log/notebook, fire protection section

transient combustible permit 2008-29-002, transient combustibles located in fire zone 29, dated 06/01/08

1R08 Inservice Inspection Activities

Procedures

EGR NGGC-0207, Rev. 2, Boric Acid Corrosion
 TMM-038, Rev. 13, Inservice Examination Program
 NDEP-0437, Rev. 3, Manual Ultrasonic Examination Procedure for Ferritic Pipe Welds
 NDEP-0301, Rev. 17, Dry Powder Magnetic Particle Examination
 NDEP-0613, Rev. 20, VT-3 Visual Examination of Nuclear Power Plant Components
 NDEP-0201, Liquid Penetrant Examination (visible dye, solvent removable)
 NDEP-A, Rev. 1, Written Practice Qualification Requirements for [Non-Destructive Examination] Personnel

Action Requests

AR 300582, Support discrepancy identified during ISI on 239/SI-4-6013
 AR 248014, CVC 349E has Corrosion on pump casing bolt and nut
 AR 287401 – Brown Boric Acid (Brown and white) identified on BA-TNK-A-HTR-A upper flange.
 AR 300581, Containment liner plates bowed, curled, and in some cases missing restraining studs/pins.
 AR 300385, [Containment Vessel] liner corrosion

Other

Boric Acid Corrosion Control Program Assessment Number 259644
 ISI Relief Request Number RR-10, Leakage at bolted connections
 Work Order 774377, Cut out and replace valve CVC 239A
 Work Order 01052898, cut out and replace valve AFW-69
 Work order 01424952, Install new vent valve SI-974

1R11 Licensed Operator Regualification

Procedure AOP-014, Component Cooling Water System Malfunction, Rev. 25
 Procedure AOP-018, Reactor Coolant Pump Abnormal Conditions, Rev. 17

1R12 Maintenance Effectiveness

Action Requests

286075, [Control room HVAC temperature controller] TIC-6513 failed following [calibration] due to incorrect retermination
 286046, 6510 Loop For Main Control Room HVAC System Improvement

Procedures

MMM-001, Conduct of Maintenance, Rev. 86
 PIC-205 Goldline Model #SP-43D/TD-SP Temperature Controller, Rev. 4
 MMM-042, Documentation of Temporary Lead Lifts and Jumpers, Valve Manipulations and Switch Manipulations, Plugs/Connectors Removal and Reinstallation or Thermocouple Polarity Test, Rev. 16
 OST-701-8, V12-10 and V12-11 Inservice Valve Test, Rev. 10
 OST-703-9, Inservice Valve Test for V12-12 and V12-13, Rev. 2
 OWP-002, Containment Vessel Isolation, Rev.

OMM-007, Equipment Inoperable Record, Rev. 77
 OP-921, Containment Air Handling, Rev. 48

Maintenance Rule Documents

For system 1000 (containment isolation valve – pseudo system)

- Event Log Report for 4/18/2007 – 10/1/2008
- Scoping and Performance Criteria

For system 8220 [Heating, Ventilation, and Air Conditioning] Control Room Area:

- Event Log Report for 6/11/2007 – 7/22/2008
- Scoping and Performance Criteria

Other

Control-room logs for 7/2/2008

Work Order 1029295, Control Room Instrumentation

Work Order 1379211, No Power at Controller TIC-6513 With Breaker Closed

Engineering Change 54398, Control Wiring Change for Containment Pressure Relief Valves
 V12-10/11 and V12-12/13

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Procedure OMM-048, Work Coordination and Risk Assessment, Rev. 38

Procedure ADM-NGGC-0006, Online EOOS Models for Risk Assessment, Rev. 6

1R15 Operability Evaluations

Procedures

AOP-022, Loss of Service Water, Rev. 31

APP-002, Engineering Safeguards, Rev. 54

OPS-NGGC-1305, Operability Determinations, Rev. 1

OST-302-4, Comprehensive Flow Test for Service Water Pumps C and D, Rev. 14

OST-303-2, Service Water Booster Pump B Test, Rev. 9

Other Documents

Drawing G-190199, Service & Cooling Water Flow Diagram, Sheet 7, Rev. 38

Drawing G-190199, Service & Cooling Water System Flow Diagram, Sheet 9, Rev. 55

Engineering Disposition 72009, Emergency diesel generator overspeed trip mechanism spring failure

Fairbanks Morse Service Information Letter, Volume Issue A, Issue 22, Rev. 1, 8-1/8 O.P. Fuel Control Linkage

Operator logs for November 11, 2008

Technical Specification 3.7.10, Control Room Emergency Air Temperature Control (CREATC)

Technical Specification Basis B 3.7.10, CREATC

UFSAR 9.2.1, Control Room Condensing Units

1R19 Post Maintenance Testing

Procedures

OST-409-2, [Emergency Diesel Generator] "B" Fast Speed Start, Rev. 37

OST-207, Comprehensive Flow Test for the Motor Driven Auxiliary Feedwater Pumps, Rev. 50
 OP-601, [Direct Current] Supply System, Rev. 41
 OST-302-2, Service Water Pumps C & D Inservice Test, Rev. 45

Work Orders

1039781, Inspect check valve SW-541
 1440102, Battery charger B-1 failed to trip during OST-163

1R20 Refueling and Outage Activities

Drawings

1BN-0000002470, sheet 2, Machine Train Diagram, Turbine Generator, Rev. C
 HBR2 10305, Sheet 1, Reactor Containment Building Safe Load Path Missile Shield and Support, Rev. 4
 HBR2 10305, Sheet 2, Reactor Containment Building Safe Load Path Internals and [Reactor Vessel] Head, Rev. 5
 HBR2 10306, Reactor Containment Building Safe Load Path Reactor Coolant Pumps and Misc. Loads, Rev. 7
 HBR2 10307, Fuel Handling Building Safe Load Paths, Rev. 3

Procedures

CM-603, Disassembly and Assembly of the Containment Equipment Hatch and Missile Barrier, Rev. 30
 FMP-019, Fuel and Insert Shuffle, Rev. 37
 GP-005, Power Operation, Rev. 89
 GP-007, Plant Cooledown From Hot Shutdown to Cold Shutdown, Rev. 78
 GP-008, Draining the Reactor Coolant System, Rev. 63
 GP-009-2, Filling the Refueling Cavity with Reactor Defueled, Rev. 7
 GP-010, Refueling, Rev. 67
 MMM-009, Operation, Testing and Inspection of Cranes and Material Handling Equipment, Rev. 63
 MRP-004, Reactor Vessel Head Removal and Installation, Rev. 22
 OMM-033, Implementation of [Containment Vessel] Closure, Rev. 19
 OMP-003, Shutdown Safety Function Guidelines, Rev. 34
 OMP-004, Outage Risk Assessment, Rev. 27
 OP-401, Auxiliary Heating System, Rev. 65
 OP-603, Electrical Distribution, Rev. 83
 PLP-006, Containment Vessel Inspection/Closeout, Rev. 77
 PLP-059, Refueling Startup Readiness Assessment, Rev. 23
 PM-125, Crane Hook Inspection Annual, Rev. 26
 PM-132, Containment Polar Gantry Crane Semiannual at Hot or Cold Shutdown Rev. 16
 PRO-NGGC-0200, Procedure Use and Adherence, Rev. 8

Correspondence

GD-78-2207, CP&L to NRC, "Control of Heavy Loads Near Spent Fuel", August 9, 1978
 NRC letter, "Control of Heavy Loads", dated December 12, 1980
 NO-81-1336, CP&L to NRC, "Control of Heavy Loads", August 12, 1981

Un-numbered letter, CP&L to NRC, "Control of Heavy Loads - NUREG-0612", December 15, 1982

NLS-85-032, CP&L to NRC, "Control of Heavy Loads", January 30, 1985

Training Plans

ME217G, Overhead Crane Operation, Rev. 3

MEI0005R, MMM-009 Operation, Testing, and Inspection of Cranes and Material Handling Equipment, Rev. 1

ME210G, Hydraulic Crane Operation, Rev. 6

Action Requests

175608, Heavy load lifts outside NUREG-0612 guidelines

257263, RO-25 Schedule Pre-Outage Risk Assessment

261409, [Final Safety Analysis Report] not updated to reflect heavy-loads analysis

305658, OP-405 Rev. 47, Main and Reheat Steam System, add a section for controlling [reactor coolant system] temperature with the [main steam isolation valves] closed.

306864, Revise [procedure] GP-005, Power Operation, Rev. 89, to allow closure of [main steam isolation valves] if required to isolate turbine for balance shot activities.

306893, [Procedure] GP-005, Rev 90, Power Operation, added concurrent performance of new step 8.3.17.5 if required to ensure these actions are taken if needed due to stop valve leakage.

Other

ANSI N14.6 1978, "Standard For Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds (4500 kg) or More For Nuclear Materials"

ANSI N14.5-1977, "American National Standard for Leakage Tests on Packages for Shipment of Radioactive Materials"

Engineering Change 66104, Best Estimate Time to Boil Calculation for Early Equipment Hatch Removal

Engineering Change 66470, Cycle 26 Core Re-Design and Analysis, Rev. 2

GID/R87038/0007, Generic Issues Document Hazards Analysis, Rev. 5

NUREG-0612, Control of Heavy Loads at Nuclear Power Plants

OMM-001-6 Post-Trip/Safeguards Review Report, dated 5/15/07

Self-Assessment Report 176381, RNP Rigging and Lifting Program, October 2-6, 2006

SFP Level and Temperature Monitoring Contingency Plan, Rev. 0

[Technical Evaluation Report]-C5506-389, "Control of Heavy Loads - Phase I Safety Evaluation Report"

Licensing Document Change Request 08-0015, "Control of Heavy Loads in Accordance with [Nuclear Engineering Institute] 08-0015"

1R22 Surveillance Testing

OST-154, Safety Injection System High Head Check Valve Test, Rev. 44

OST-163, Safety Injection Test and Emergency Diesel Auto Start on Loss of Power and Safety Injection (Refueling), Rev. 48

OST-253, Comprehensive Flow Test for the [Residual Heat Removal] Pumps, Rev. 44

OST-407, Verification of Component Response to Blackout Sequence, Rev. 14

OST-409-1, [Emergency Diesel Generator] "A" Fast Speed Start, Rev. 39

OST-409-2, [Emergency Diesel Generator] "B" Fast Speed Start, Rev. 38
 OST-411, Emergency Diesel Generator "B" (Twenty-Four Hour Load Test), Rev. 38
 OST-933-27, Penetration 19, [Component Cooling Water] Return From [Reactor Coolant Pump Startup] (CC-730) Leakage Test (As Required and Every 18 Months), Rev. 0
 EST-137-5, Local Leak Rate Test of Purge Exhaust Valves (Refueling Shutdown or Other Convenient Interval Not To Exceed 2 Years), Rev. 0

1EP6 Drill Evaluation

Emergency Response Organization Exercise -0701
 Procedure PLP-007, Robinson Emergency Plan, Rev. 68

4OA2 Identification and Resolution of Problems

Procedures

CAP-NGGC-0200, Corrective Action Program, Rev. 26
 CAP-NGGC-0206, Corrective Action Program Trending and Analysis, Rev. 3
 OMM-048, Work Coordination and Risk Assessment, Revs. 26, 27, and 38
 OP-306, Component Cooling Water System, Rev. 57

Corrective Action Program Trend Reports

Site-Wide Analysis of Condition Reports for Performance Trends, April 1 – June 30, 2008 & July 1 – September 30, 2008
 [Environmental & Chemistry] and [Radiation Control] CAP Rollup & Trend Analysis July and August 2008
 Engineering CAP Rollup & Trend Analysis, September/October 2008
 Maintenance CAP Rollup & Trend Analysis, July 2008 & August 2008
 Operations CAP Rollup & Trend Analysis, July 2008 & August 2008
 Outage & Scheduling CAP Rollup & Trend Analysis, February, March, April, & May 2008
 Plant Support Group CAP Rollup & Trend Analysis, May, June, and July 2008

4OA3 Event Follow-up

Post-trip/safeguards review report for the 11/17/08, 05:51 reactor trip
 NRC Event Notification 44660
 Procedure OMM-001-6, Operations Assessments, Rev. 24

4OA5 Other Activities

LIST OF DOCUMENTS REVIEWED

- Progress Energy Letter RPN-RA/04-0097, dated July 22, 2004, Submittal of 60-Day Response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Connections at Pressurized-Water Reactors"
- Action Request (AR) 131216-01, Provide a description of the pressurizer penetrations and steam space piping connections for RNP
- Carolina Power and Light (CP&L) Pressurizer Stress Report by Westinghouse Electric Corporation, dated August 19, 1969
- Westinghouse Equipment Specification 676440, Revision 2, "Pressurizer Vessel," dated January 15, 1969
- Westinghouse Equipment Specification 676360, Revision 2, "1300 cu ft. Pressurizer," dated March 14, 1969
- Procedure ISwT-PDI-AUT11, Automated Inside Surface Ultrasonic Examination of Piping Welds Using Phased Array, Revision 1, Change 0
- Procedure ISwT-PDI-AUT12, Automated Inside Surface Ultrasonic Flaw Depth Sizing of Piping Welds Using Phased Array, Revision 0, Change 0
- Procedure ISwT-AET1, Automated Eddy Current Examination of Nozzle Dissimilar Metal Welds from the Inside Surface, Revision 0, Change 0
- Procedure TMM-038, Inservice Examination Program, Revision 13
- NDE Examiner Certification Review Sheets for selected NDE examiners
- Drawing Number 498B932, Weld Preparation for Stainless Steel Pipe with Consumable Insert, Change 9 (from Westinghouse Equipment Specification 676360)
- Drawing Number E-232-276, Nozzle Assembly and Details
- Drawing Number G-190269, Primary Coolant Loop System Piping, Revision 10, and Weld Data Report for selected associated welds
- Westinghouse Technical Manual 1440-C97, Pressurizer for CP&L Robinson Plant Unit 2
- Westinghouse Technical Manual 144-C346, Vertical Steam Generator Instructions for CP&L H. B. Robinson Unit 2
- EPRI Report IR-2008-339, Review of Ultrasonic Examinations Performed at H. B. Robinson Unit 2 on the Reactor Pressure Vessel Inlet/Outlet Nozzle-to-Safe-End and Safe-End-to Pipe/Elbow Welds during the RO25 Outage, dated November 2008
- Progress Energy Nuclear Generation Group Alloy 600 Strategic Plan, Revision 1a
- Quick Hit Self-Assessment Report 252152 07, RCS Dissimilar Metal Butt Welds (TI-172)
- Progress Energy letter RNP-RA/08-0048, dated June 6, 2008, to the NRC, Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Appendix VIII (Supplements 2 and 10), for the Fourth Ten-Year Inservice Inspection Program Interval
- NRR letter to licensee, dated October 22, 2008, approving the Request for Relief from ASME Code, Section XI, Appendix VIII, Supplement 2 and Supplement 10 Weld Examination Requirements