



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

April 20, 2007

Carolina Power and Light Company
ATTN: Mr. Tom Walt
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 05000261/2007002

Dear Mr. Walt:

On March 31, 2007, the US 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 April 4, 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.

Based on the results of this inspection, the inspectors identified one finding of very low safety significance (Green). This finding was determined to involve violations of NRC requirements. However, because of its very low safety significance and because it has been entered into your Corrective Action Program (CAP), the NRC is treating this issue as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest this NCV, 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 H.B. Robinson facility.

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> (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 05000261/2007002
w/Attachment: Supplemental Information

cc w/encls: (See page 3)

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/

Randy Musser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000261/2007002
w/Attachment: Supplemental Information

cc w/encls: (See page 3)

X PUBLICLY AVAILABLE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER: _____

OFFICE	RII:DRP	RP:DRP	RII:DRP	RII:DRS	RII:DRS	RII:DRS	RII:DRP
SIGNATURE	SON	RCH2 by fax	DAJ2 by fax	BLC2 by email	BRB1 for	BRB1 for	WTL by email
NAME	SNinh	RHagar	DJones	BCaballero	J Diez-Velez	HGepford	WLoo
DATE	04/20/2007	04/19/2007	04/19/2007	04/19/2007	04/20/2007	04/20/2007	04/19/2007
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
OFFICE	RII:DRS						
SIGNATURE	MAB7 for						
NAME	WLea						
DATE	04/20/2007	4/ /2007	4/ /2007	4/ /2007	4/ /2007	4/ /2007	4/ /2007
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: C:\FileNet\ML071100293.wpd

cc w/encl.:

William G. Noll
Director, Site Operations
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Electronic Mail Distribution

Ernest J. Kapopoulos, Jr.
Plant General Manager
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Electronic Mail Distribution

Paul Fulford, Manager
Performance Evaluation and
Regulatory Affairs PEB 5
Electronic Mail Distribution

C. T. Baucom, Supervisor
Licensing/Regulatory Programs
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Electronic Mail Distribution

J. F. Lucas, Manager
Support Services - Nuclear
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Electronic Mail Distribution

Henry J. Porter, Director
Div. of Radioactive Waste Mgmt.
Dept. of Health and Environmental
Control
Electronic Mail Distribution

R. Mike Gandy
Division of Radioactive Waste Mgmt.
S. C. Department of Health and
Environmental Control
Electronic Mail Distribution

Beverly Hall, Chief Radiation
Protection Section
N. C. Department of Environment,
Health and Natural Resources
Electronic Mail Distribution

David T. Conley
Associate General Counsel - Legal Dept.
Progress Energy Service Company, LLC
Electronic Mail Distribution

John H. O'Neill, Jr.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, NW
Washington, DC 20037-1128

Chairman of the North Carolina
Utilities Commission
c/o Sam Watson, Staff Attorney
Electronic Mail Distribution

Robert P. Gruber
Executive Director
Public Staff - NCUC
4326 Mail Service Center
Raleigh, NC 27699-4326

Public Service Commission
State of South Carolina
P. O. Box 11649
Columbia, SC 29211

Distribution w/encl. (See page 4)

Report to Tom Walt from Randall A. Musser dated April 20, 2007

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION
REPORT 05000261/2007002

Distribution w/encl:

C. Patel, NRR

C. Evans (Part 72 Only)

L. Slack, RII EICS

OE Mail (email address if applicable)

RIDSNRRDIRS

PUBLIC

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-261

License No: DPR-23

Report No: 005000261/2007002

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

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: January 1, 2007 through March 31, 2007

Inspectors: R. Hagar, Senior Resident Inspector
D. Jones, Resident Inspector
B. Caballero, Operator Licensing Inspector, (Section 1R11)
J. Díaz Vélez,, Health Physicist (Section 2OS3)
H. Gepford, Senior Health Physicist (Section 2PS1)
W. Loo, Senior Health Physicist (Sections 2PS3, 4OA1 and 4OA5)
E. Lea, Lead Operator Licensing Inspector, (Section 1R11)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000261/2007-002, Carolina Power and Light Company; on 01/01/2007-03/31/2007; H.B. Robinson Steam Electric Plant, Unit 2; Emergency Preparedness.

The report covered a three month period of inspection by resident inspectors, two operator licensing inspectors, two senior health physicists, and a health physicist. One non-cited violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 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. NRC-Identified and Self-Revealing Findings

Cornerstone: Emergency Preparedness

- Green. An NRC-identified non-cited violation of 10 CFR 50.47(b)(10) was identified for the failure to provide adequate respiratory protection equipment for emergency response, compromising the protective actions developed for the plume exposure pathway for emergency workers. An adequate quantity of small and large sized self-contained breathing apparatus (SCBA) respirator masks were not available in the control room for licensed plant operators that were fit-tested for said sizes. This issue was entered into the licensee's corrective action program.

This finding is greater than minor because it is associated with the Emergency Preparedness cornerstone attribute of Response Organization Performance and adversely affects the cornerstone objective of ensuring the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was evaluated using Sheet 1, Failure to Comply, of the Emergency Preparedness SDP. The issue described was a planning standard problem, was not a risk-significant planning standard problem, and did not involve a planning standard function failure. Therefore, the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance because the procedure used for managing SCBA equipment did not contain information regarding the mask sizes required to be staged in the control room based on fit-test results for emergency responders, resulting an inadequate number of large and small sized masks being available. (Section 2OS3)

B. Licensee-Identified Violations

None.

Enclosure

REPORT DETAILS

Summary of Plant Status The unit began the inspection period at full rated thermal power, and operated at full power until March 23, when the unit began an end-of-cycle coastdown at the rate of approximately -1% of rated thermal power per day. At the end of the inspection period, the unit was therefore operating at 92% of rated thermal power.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

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:

<u>System Walked Down</u>	<u>SSC Out of Service</u>	<u>Date Inspected</u>
Service Water Train A	D Service Water Pump	January 10
Steam Driven Auxiliary Feed Water Train	A Motor Driven Feed Water Train A	March 7
Service Water Booster Pump Train B	A Service Water Booster Pump	March 20

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.

Complete System Walkdown:

The inspectors conducted a detailed review of the alignment and condition of the Chemical and Volume Control System to verify that the existing alignment of the system was consistent with the correct alignment. To determine the correct system alignment, the inspectors reviewed the procedures, drawings, and the Updated Final Safety Analysis Report (UFSAR) section listed in the Attachment. The inspectors also walked down the system. During the walkdown, the inspectors reviewed the following:

- Valves were correctly positioned and did not exhibit leakage that would impact the functions of any given valve.
- Electrical power was available as required.
- Major system components were correctly labeled, lubricated, cooled, ventilated, etc.
- Hangers and supports were correctly installed and functional.

Enclosure

- Essential support systems were operational.
- Ancillary equipment or debris did not interfere with system performance.
- Tagging clearances were appropriate.
- Valves were locked as required by the locked valve program.

The inspectors reviewed the documents listed in the Attachment to verify that the ability of the system to perform its functions could not be affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, and other system-related issues tracked by the engineering department.

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

- AR 158872, Dedicated Shutdown Distribution Panel Circuit 6 Found Out of Position
- AR 169711-02, Reactor Coolant Pump Vibration Monitor De-energized Unexpectedly

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 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>
1	Diesel Generator B Room
16	Battery Room
22	Control Room
25A/B	Turbine Building East and West Ground Floor
25D	Dedicated Shutdown Diesel Generator
29	Service Water Pump Area

Also, to evaluate the readiness of personnel to prevent and fight fires, the inspectors observed fire brigade performance during the unannounced fire drill in the charging pump room on

Enclosure

February 1. That drill challenged the fire brigade to extinguish a simulated oil fire in the vicinity of the B charging pump. Documents reviewed are listed in the Attachment.

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

- AR 211951, Equipment Placed Near Ramp to Fire Brigade Storage
- AR 212159, Process Improvements for Response to Fire Alarm in the Containment Vessel
- AR 211003, Access to Material Needed for Fire Emergency

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

External Flooding

Because the A and B emergency diesel generator rooms contain risk-significant components which are susceptible to flooding from external sources, the inspectors walked down those rooms to verify that the area configuration, features, and equipment functions were consistent with the descriptions and assumptions used in UFSAR Section 3.4, Water Level (Flood) Design, and in the supporting basis documents listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed the inspection of the A component cooling water heat exchanger to verify that inspection results were appropriately categorized against the pre-established acceptance criteria described in procedure CM-201, Safety Related Heat Exchanger Maintenance, Rev. 39. The inspectors also verified that the frequency of inspection was sufficient to detect degradation prior to loss of heat removal capability below design basis values. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Quarterly Review

a. Inspection Scope

The inspectors observed licensed-operator performance during requalification simulator training for crew two to verify that operator performance was consistent with expected operator performance, as described in Operations Training LOCT, Rev. 2. This training tested the operators' ability to take the reactor critical, perform low power physics testing and synchronize the unit to the grid. 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.

b. Findings

No findings of significance were identified.

.2 Biennial Review

a. Inspection Scope

The inspectors reviewed the facility operating history and documents associated with the licensed operator requalification program in preparation for this inspection. While on site the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests and written examinations associated with the operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the licensee in implementing requalification requirements identified in 10 CFR Part 55, Operators' Licenses. The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, Operator Licensing Examination Standards for Power Reactors, and Inspection Procedure 71111.11, Licensed Operator Requalification Program. The inspectors also evaluated the simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998. The inspectors observed one crew during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, licensed operator qualification records, watchstanding and medical records, simulator modification request records and performance test records, feedback forms, and remediation plans. Documents reviewed are listed in the Attachment.

Following the completion of the annual operating tests and written examinations, which ended on March 1, 2007, the inspectors reviewed the overall pass/fail results of the individual JPM operating tests, the simulator operating tests and the written examinations administered by the licensee during the operator licensing requalification cycle. These results were compared to the thresholds established in Manual Chapter 609, Appendix I, Operator Requalification Human Performance Significance Determination Process.

Enclosure

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>
Steam-driven auxiliary feedwater pump suction pressure fluctuations	166937
In Lead/Lag module PM-455A, a low-pressure reactor trip signal was found out of tolerance	213638

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.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

For the four 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

Enclosure

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:

- The work week of January 1 - January 5, including emergent maintenance on the B charging pump and the A circulating water pump
- The work week of January 15 - January 19, including scheduled maintenance on the A circulating water pump that affected the availability of the A service water pump and the motor-driven firewater pump
- The work week of February 16 - February 23, including scheduled maintenance on components in the residual heat removal system
- The work week of March 5 - March 9, including emergent maintenance on the B motor driven auxiliary feedwater train

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, 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 217948, Suspected Leakage into A Seal Injection Filter
- AR 219365, C Steam Generator Manway Steam Leak
- AR 223822, [Auxiliary Feedwater Pump A Flow Control Valve] FCV-1424 went from closed to [neither fully closed nor fully open] status
- AR 226215, Operability Determination for Emergency Diesel Generator A (Fuel Racks Not Closed)

Documents reviewed are listed in the Attachment.

Enclosure

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modificationsa. Inspection Scope

The inspectors reviewed the modification described in Engineering Change 64814, Install a Valve in Series with SI-888R to Perform Throttling, to verify that:

- This modification did not degrade the design bases, licensing bases, and performance capabilities of risk significant SSCs,
- Implementing this modification did not place the plant in an unsafe condition, and
- The design, implementation, and testing of this modification satisfied the requirements of Procedure EGR-NGGC-005, Engineering Change, and 10 CFR 50, Appendix B, Criterion III, Design Control.

Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the five 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 inspectors witnessed/reviewed the following tests:

<u>Test Procedure</u>	<u>Title</u>	<u>Related Maintenance Activity</u>	<u>Date Inspected</u>
OST-207	Comprehensive Flow Test for the Motor Driven Auxiliary Feedwater Pumps	Replace flow control valve, FCV-1424	January 22

Enclosure

OST-352-4	Comprehensive Flow Test for Containment Spray Pump B	Replace pump seals	February 1
OST-201-2	[Motor-Driven Auxiliary Feedwater System] Component Test - Train B	Maintenance and inspection of the pump motor breaker	February 27
MST-014	Steam Generator Pressure Protection Channel Testing	Replacement of a signal comparator for steam generator pressure channel 486	March 15
OST-352-3	Comprehensive Flow Test for Containment Spray Pump A	Limiter torque grease inspection and meggar testing	March 21

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

Review of Outage Plan

a. Inspection Scope

For the outage scheduled to begin on April 7, the inspectors reviewed the outage risk control plan to verify that the licensee had considered risk in developing the outage schedule, had performed adequate risk assessments, and had planned to implement appropriate risk-management strategies when required by 10 CFR 50.65(a)(4).

Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the six 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

Enclosure

functions. Documents reviewed are listed in the Attachment.

<u>Test Procedure</u>	<u>Title</u>	<u>Date Inspected</u>
OST-014	[Local Leak Rate Test] of Personnel Air Lock Door Seals	January 24
OST-051*	Reactor Coolant System Leakage Evaluation	February 5
MST-016	Containment Pressure Protection Channel (Set I, II, and III) Testing	February 7
OST-101-7	Comprehensive Flow Test for Charging Pump B	February 15
EST-010**	Containment Personnel Airlock Leakage Test (Semiannual)	February 27
OST-910	Dedicated Shutdown Diesel Generator (Monthly)	March 8

* This procedure was a Reactor Coolant System leakage detection surveillance.

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

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification described in Engineering Change 66354, Temporary Cooling Fans for Main Transformer C to verify that there was no significant impact on the operation of the main transformers, and to verify that the modification satisfied the requirements of Procedure EGR-NGGC-005, Engineering Change.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

Enclosure

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation and Post-Accident Sampling During tours of the Auxiliary Building and Spent Fuel Pit area, the inspectors observed installed radiation detection equipment including the following instrument types: Area Radiation Monitors, Continuous Air Monitors, Personnel Contamination Monitors (PCMs), and components of the Post-Accident Sampling System. The inspectors observed the physical location of the components and noted the material condition. This inspection did not evaluate the completion and adequacy of radiation survey instrument calibrations performed by the licensee's central calibration facility located at the Harris Environmental Monitoring Laboratory. These activities are reviewed during the biannual Harris inspection of IP 71121.03.

During equipment walk-downs, the inspectors observed functional checks of various fixed and portable radiation monitoring/detection instruments. The observations included source/response checks of PCM and portal monitoring (PM) equipment, portable ion chambers and telepoles, SAMs, and a Whole Body Counter (WBC). The inspectors reviewed calibration records and discussed the functional testing and testing intervals for selected PCM and PM equipment located at the RCA exit. PCM equipment detection capabilities were demonstrated using a low-level mixed radionuclide source that was passed through the equipment. The inspectors also observed demonstrations of instrument calibrations checks, including a WBC, a Eberline 6112B (Teletector), and an FH-40 (FAG). The 10 CFR Part 61 analysis for Dry Active Waste was reviewed to determine if calibration and response check sources are representative of the plant source term.

The inspectors reviewed calibration records for select PCMs, PMs, SAMs, WBCs, Eberline 6112Bs, and an FH-40s (FAG). In addition, calibration records were reviewed for R-1 thru R-8, R-9, R-30, R-31A, B, C, R-32A & B and R-33 radiation monitors. The records were evaluated to determine frequency and adequacy of the calibrations. Calibration stickers on portable survey instruments were noted during inspection of storage areas for "ready-to-use" equipment.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; TS Section 3; UFSAR Chapter 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report Attachment.

Self-Contained Breathing Apparatus (SCBA) and Protective Equipment Selected SCBA units staged for emergency use in the Control Room and other locations were inspected for material condition, air pressure, mask sizes provided, and number of units available. The inspectors also reviewed maintenance records for components of selected SCBA units for the past five years and certification records associated with supplied air quality.

Qualifications for licensee staff responsible for testing SCBA equipment were evaluated. Maintenance of SCBA equipment was reviewed to determine if repairs were performed by qualified individuals. In addition, selected Control Room operators were interviewed to

Enclosure

determine their knowledge of available SCBA equipment locations, including spectacles (corrective lens inserts) if needed, and their training on bottle change-out during periods of extended SCBA use. The inspectors also verified Control Room operators knowledge of their SCBA mask size for which they were fit tested and their knowledge of mask availability if a fitting size was not found inside SCBA kits at the Control Room. Respirator qualification records were reviewed for several Control Room operators and Maintenance department personnel assigned emergency response duties.

Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; RG 8.15, Acceptable Programs for Respiratory Protection; ANSI-Z88.2-1992, American National Standard for Respiratory Protection; and applicable licensee procedures. Documents reviewed are listed in the Attachment.

The inspectors completed nine of the specified line-item samples detailed in IP 71121.03.

b. Findings

Introduction. A Green NRC-identified non-cited violation (NCV) of 10 CFR 50.47(b)(10) was identified for the failure to provide adequate respiratory protection equipment for emergency response, compromising the protective actions developed for the plume exposure pathway for emergency workers. An adequate quantity of small and large sized self-contained breathing apparatus (SCBA) respirator masks were not available in the control room for licensed plant operators that were fit-tested for said sizes.

Description. The inspectors evaluated the adequacy of SCBA units staged in the control room for emergency use. Through direct observations at the control room, it was determined that the licensee staged five SCBA units for emergency use. The inspectors determined that, as of January 10, 2007, four units contained medium respirator masks; and one unit contained a small respirator mask. Based on the records reviewed and discussions with licensee personnel, the inspectors noted that no large respirator masks had been staged in the control room. Based on licensee records, the inspectors noted that fifteen individuals in the Emergency Response Organization group were fitted for other than medium sized respirator masks. HPS-NGGC-0015, Managing Respirators, Rev. 5, Section 5.0, prerequisites, states that employees must have a current fit test qualification for the type and size respirators to be worn before the program will permit respirator issue. However, the procedure does not provide guidance for ensuring that an appropriate number of masks corresponding to the fit-test results for emergency responders are staged in emergency response SCBA kits/locations. In the event of an emergency requiring immediate respiratory protection, licensed operators who were fit-tested in large or small respirator masks would not have been qualified to use the pre-staged SCBA equipment and may have been unable to function in the event the control room becomes inhabitable, must evacuate the control room, or must perform emergency response functions in a hazardous environment outside of the control room.

Analysis. This finding is greater than minor because it is associated with the Emergency Preparedness cornerstone attribute of Response Organization Performance and adversely affects the cornerstone objective of ensuring the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

Enclosure

The finding was evaluated using Sheet 1, Failure to Comply, of the Emergency Preparedness SDP. The issue described was a planning standard problem, although not a risk-significant planning standard problem, and did not involve a planning standard function failure. Therefore, the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance because the procedure used for managing SCBA equipment did not contain information regarding the mask sizes required to be staged in the control room based on fit-test results for emergency responders, resulting an inadequate number of large and small sized masks being available.

Enforcement. 10 CFR 50.47(b)(10) states, in part, that a range of protective actions will be developed for the plume exposure pathway Emergency Planning Zone (EPZ) for emergency workers. Contrary to the above, as of January 10, 2007, the licensee failed to provide adequate respiratory protective equipment, i.e., SCBA respirator masks for licensed plant operators with emergency response functions fit-tested for small and large sized masks. HPS-NGGC-0015, Managing Respirators, Rev. 5, Section 5.0, prerequisites, states that employees must have a current fit test qualification for the type and size respirator to be worn before the program will permit respirator issue. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program (AR No. 00218715), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000261/2007002-01, Failure to Provide Adequate Respiratory Protection Equipment for Emergency Response.

Problem Identification and Resolution ARs associated with instrumentation and protective equipment were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with CAP-NGGC-0200, Corrective Action Program, Rev. 18. Documents reviewed are listed in Section 2OS3 of the report Attachment.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment During inspector walk-downs, accessible sections of the liquid and gaseous radioactive waste (radwaste) processing and effluent systems were evaluated for material condition and conformance with system design diagrams. The evaluated systems included selected radwaste system processing tanks, pumps, valves, and piping including those associated with the gas decay tanks, gas analyzer, waste condensate tanks, waste holdup tank, drain tanks, and monitor tanks. In addition, liquid and gaseous waste processing and effluent radiation monitoring equipment and sample lines for the containment vessel particulate and gaseous monitors (R-11, R-12), plant vent exhaust monitor skid and sampling lines (R-14), fuel handling building basement and upper level exhaust monitors (R-20, R-21), steam generator blowdown monitors (R-19A/B/C), liquid waste disposal monitor (R-18), and condensate polisher liquid waste monitor (R-37) were evaluated during walk-downs. For select process monitors, local readouts were compared with readings in the control room. The inspectors interviewed chemistry supervision and engineering personnel regarding radwaste equipment configuration and effluent monitor operation, including changes made to the R-14 monitor skid and sampling equipment.

Enclosure

The inspectors reviewed performance records and calibration results for selected radiation monitors and ventilation exhaust systems. For the reviewed monitoring systems, the inspectors reviewed the most recent calibration records, including the functional/flow checks, as appropriate. The inspectors reviewed the out-of-service (OOS) monitors from February 2005 through November 2006 and verified that required compensatory sampling was performed for selected systems. The most recent surveillances on the emergency operations facility, spent fuel pool (SFP), and containment purge exhaust ventilation systems were reviewed. Performance and operations of the systems were reviewed and discussed with cognizant licensee personnel.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; American Nuclear Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) N509-1976, Nuclear Power Plant Air Cleaning Units and Components, and ANSI N510-1975, Testing of Nuclear Air-cleaning Systems; Regulatory Guide (RG) 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plants and RG 1.143 Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light Water Cooled Reactors; Offsite Dose Calculation Manual (ODCM), Revision (Rev.) 27; Technical Specifications (TS) Section 5.5.4, Radioactive Effluent Controls Program; and Updated Final Safety Analysis Report (UFSAR) Chapters 9 and 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Effluent Release Processing and Quality Control (QC) Activities The inspectors directly observed and evaluated chemistry staff proficiency in conducting weekly surveillance activities, including the particulate filter and charcoal cartridge change-out and noble gas/tritium collection from the fuel handling building basement exhaust (R-20) and tritium sampling from the condensate polisher liquid waste (R-37). In addition, the inspectors discussed the process for performing liquid and gaseous releases with chemistry personnel. Chemistry technician proficiency in processing and counting effluent samples and generating/closing release permits was evaluated.

QC activities associated with gamma spectroscopy and liquid scintillation counting were discussed with count room technicians and Chemistry supervision. The inspectors reviewed QC charts for January 2007 for High Purity Germanium (HPGe) detector Number (No.) 2 and the liquid scintillation counter, and reviewed licensee procedural guidance for count room QC activities. The inspectors reviewed the two most recent calibration records for HPGe detector Nos. 1 and 3 (select counting geometries) and for the liquid scintillation counter. In addition, results of the radiochemistry cross-check program analyses for the licensee's onsite counting room were reviewed and discussed with cognizant licensee individuals.

Selected portions of procedures for effluent sampling, processing, and release were observed and evaluated for consistency with chemistry technician activities. Both gaseous and liquid release permits were reviewed against ODCM specifications for pre-release sampling and effluent monitor setpoints. The inspectors discussed performance of pre-release sampling and analysis and release permit generation with chemistry technicians. The inspectors reviewed the

Enclosure

2004 and 2005 Annual Radiological Effluent Release Reports to evaluate reported doses to the public and ODCM changes. The inspectors reviewed a selection of monthly, quarterly, and annual-to-date dose assessments from liquid and gaseous releases for calendar year 2006. Dose calculations to members of the public were evaluated and discussed with cognizant licensee personnel.

Current licensee programs for monitoring, tracking, and documenting the results of both routine and abnormal liquid releases to the onsite and offsite surface and ground water environs were reviewed and discussed in detail. The inspectors reviewed selected 10 CFR 50.75(g) reports associated with abnormal liquid releases and corrective actions initiated. Licensee actions to evaluate ground water hydrology and to detect any potential onsite/offsite environmental impact of significant leakage/spills from onsite systems, structures, and components were reviewed and discussed. Recent groundwater monitoring initiatives and radionuclide concentration results for onsite groundwater monitoring wells were reviewed. Initial results of samples collected from the wells did not identify tritium concentrations above environmental detection limits.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; RG 1.33, Quality Assurance Program Requirements; and TS Section 5.5. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Problem Identification and Resolution A selection of Action Requests and self-assessments associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 18. Reviewed documents are listed in Section 2PS1 of the report Attachment.

The inspectors completed eleven of the specified line-item samples detailed in Inspection Procedure (IP) 71122.01.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

a. Inspection Scope

REMP Implementation The licensee's Annual Radiological Environmental Operating Report for calendar year 2005 and REMP activities for 2005 were reviewed and discussed with cognizant licensee representatives. The inspectors discussed and evaluated the reported data for trends in radionuclide concentrations, anomalous/

Enclosure

missing data, and land-use census information. QC activities and data for selected sample types listed in the report were reviewed and evaluated. In addition, the inspectors discussed and reviewed air sample pump air flow calibration data with cognizant licensee representatives.

Equipment operational status and staff proficiency for implementing REMP activities were assessed through a review of records, observations of equipment material condition and operating characteristics, assessment of selected sample collection activities, and discussion of collection techniques for sample matrices not directly observed. Collection of weekly air particulate filters/charcoal cartridges, air flow rate determinations, water sampling, and thermoluminescent dosimeter placement were observed at selected sampling station locations. During observations of air and water sample collection, the inspectors evaluated the proficiency of collection staff and assessed the adequacy and implementation of selected collection techniques. The inspectors also verified that the persons collecting environmental samples were qualified as required by licensee procedures.

REMP guidance, implementation, and results were reviewed against ODCM details and applicable procedures listed in Section 2PS3 of the report Attachment. Environmental laboratory activities including processing and analysis are performed at the Harris Environmental Monitoring Laboratory and were not reviewed during the Robinson plant inspection.

Meteorological Monitoring Program The inspectors toured the meteorological tower and its supporting instrumentation and observed the physical condition of the equipment. The inspectors compared system generated data with data from the control room instrumentation. The data was also compared with the inspectors' observations of wind direction and speed measured at the tower. The inspectors also assessed system reliability and data recovery. Meteorological tower siting was evaluated based on near-field obstructions, ground cover, proximity to the plant, and distance from terrain that could affect the representativeness of the measurements.

Licensee procedures and activities related to meteorological monitoring were evaluated for consistency with TSs, ODCM, UFSAR Section 2.3, Meteorology, and ANS/ANSI 3.11-2005, "Determining Meteorological Information at Nuclear Facilities." Licensee's meteorological monitoring related procedures, reports and records reviewed during the inspection are listed in the report Attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) Radiation Protection (RP) program activities associated with the unconditional release of potentially contaminated materials from the Radiological Controlled Area (RCA) egress point was evaluated. The evaluation included a review of calibration records associated with the Small Article Monitor (SAM) equipment located at the RCA exit portal. The inspectors observed source checking of SAM equipment. Source activity and radionuclides used for checks and equipment minimum detectable activities were discussed with an instrument technician. Provisions for monitoring hard-to-detect nuclides were also discussed. Section 2OS3 describes additional checks on the instrumentation used to control the release of radioactive material.

The Inspectors verified that radiation detection sensitivities were consistent with NRC guidance in IE Circular 81-07, Control of Radioactively Contaminated Material, May 14, 1981, IE Information Notice 85-92, and the ODCM. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Problem Identification and Resolution Audits, self-assessments and selected licensee corrective actions associated with REMP, meteorological monitoring activities and unrestricted release of materials from the RCA were reviewed and discussed with cognizant licensee representatives. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues. Corrective action program documents were reviewed and evaluated for effective corrective actions. These documents are identified in Section 2PS3 of the report Attachment.

The inspectors completed ten of the specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors verified the four PIs identified below. For each PI, the inspectors verified the accuracy of the PI data that had been previously reported to the NRC by comparing those data to the actual data, as described below. The inspectors also compared the basis in reporting each data element to the PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 4. In addition, the inspectors interviewed licensee personnel associated with collecting, evaluating, and distributing these data.

Barrier Integrity Cornerstone

To evaluate the Reactor Coolant System (RCS) Specific Activity PI, the inspectors observed sampling and analysis of reactor coolant system samples, and compared the reported performance indicator data with records developed by the licensee while analyzing previous samples, for the period from the first quarter of 2006 through the fourth quarter of 2006.

To evaluate the RCS Leak Rate PI, the inspectors reviewed records of daily measures of RCS identified leakage, for the period from the first quarter of 2006 through the fourth quarter of 2006.

Occupational Radiation Safety Cornerstone

To evaluate the Occupational Exposure Control Effectiveness PI, the inspectors reviewed data collected from June through December 2006. The inspectors reviewed the licensee's

Enclosure

procedure for reporting PI data to the NRC, Regulatory Nuclear Generation Group Corporate Procedure - 0009, NRC Performance Indicators, Rev. 5, as well as records relevant to this PI. Specifically, the inspectors reviewed selected corrective action issues and individual RCA exit transactions with ED readings exceeding 100 millirem to assess reporting data for potential unplanned exposures and RCA exit transactions which resulted in dose rate alarm activation to evaluate entries where dose rates were higher than expected. Reviewed documents relative to this PI are listed in Section 4OA1 of the report Attachment.

Public Radiation Safety Cornerstone

To evaluate the Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences PI, the inspectors reviewed a listing of radiological effluent related corrective action program records generated from June through December 2006 and the most recent annual radioactive effluent release report to ensure that radiological effluent release occurrences were properly classified in accordance with NEI 99-02 guidance. In addition, licensee procedural guidance for classifying and reporting PI events was evaluated. Reviewed documents are listed in Section 4OA1 of the report Attachment.

b. Findings

No findings of significance were identified.

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 followup, 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 210311, Manual Reactor Trip Due to 100 percent Load Rejection for detailed review. The inspectors selected this AR because it relates specifically to the Initiating Events Cornerstone. The inspectors reviewed this report to verify:

- 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

Enclosure

- 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, Corrective Action Program, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

b. Observations and Findings

No findings of significance were identified.

4OA3 Event Follow-up

(Closed) LER 2006-001-00, "Manual Reactor Trip Due to Failure of a Turbine Governor Valve Electro-Hydraulic Control Card". This Licensee Event Report (LER) reports the reactor trip that was discussed in section 4OA3.1 of inspection report 05000261/2006005. As described in that section, no findings of significance were identified through the inspectors' review of the event. This LER further reports that the root cause of the reactor trip was failure of a turbine governor valve electro-hydraulic control system card. Section 4OA2.2 of this report describes the inspectors' review of the associated root-cause investigation report (AR 210311) and states that no findings of significance were identified. This LER presents no new information, and is therefore closed.

4OA5 Other Activities

a. Inspection Scope

Independent Spent Fuel Storage Installation (ISFSI) Radiological Controls The inspectors reviewed gamma-ray, neutron, and contamination surveys of the ISFSI facility. Inspectors also observed routine gamma-ray surveys and compared the results to previous surveys and TS limits. The inspectors evaluated implementation of radiological controls, including labeling and posting, and discussed controls with an HP Technician and HP supervisory staff. Environmental monitoring for direct radiation from the ISFSI was reviewed, and inspectors observed placement of TLDs.

Radiological control activities for ISFSI areas were evaluated against 10 CFR Part 20, 10 CFR Part 72, and Amendment 8 to the Certificate of Compliance (CoC) No. 1004 details. Documents reviewed are listed in Section 4OA5 of the report Attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On January 12, 2007, the inspectors discussed the results of the inspection described in section 2OS3 with Mr. T. Walt and other responsible staff. The inspectors noted that proprietary information was reviewed during the course of the inspection but would not be

Enclosure

included in the documented report. During a followup telephone exit on January 18, the inspectors reviewed and discussed with G. Sanders, Licensing Engineer, the cross-cutting aspect associated with the Green NCV described in section 2OS3.

On April 4, 2007, the resident inspectors presented the inspection results to Mr. T. Walt and other members of his staff. The inspectors confirmed that, except as noted above, proprietary information was not provided or examined during the inspections.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

C. Bach, Superintendent, Environmental and Chemistry
C. Baucom, Licensing Supervisor
D. Blakeney, Outage and Scheduling Manager
B. Clark, Nuclear Assurance Manager
B. Davis, Superintendent, Technical Services
W. Farmer, Engineering Manager
J. Huegel, Maintenance Manager
E. Kapopoulos, Plant General Manager
J. Lucas, Manager, Support Services - Nuclear
G. Ludlum, Training Manager
W. Noll, Director of Site Operations
G. Sanders, Licensing Engineer
L. Sanders, Continued Training Supervisor
J. Stanley, Superintendent, Systems Engineering
T. Tovar, Radiation Protection Superintendent
T. Walt, Vice President
S. Wheeler, Supervisor, Regulatory Support
D. Winters, Superintendent, Operator Training

NRC personnel

R. Musser, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

2007002-01	NCV	Failure to Provide Adequate Respiratory Protection Equipment for Emergency Response (Section 2OS3)
------------	-----	--

Closed

2006-001-00	LER	Manual Reactor Trip Due to Failure of a Turbine Governor Valve Electro-Hydraulic Control Card (Section 4OA3)
-------------	-----	--

Previous Items Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

1R04 Equipment Alignment

Partial System Walkdown

Service Water system:

Drawing G-190199, Service and Cooling Water System Flow Diagram, Sheet 2 of 13, Rev. 63
Clearance Order Checklist 132825, [Service Water] Pump D - Remove and Replace Pump

Steam Driven Auxiliary Feed Water system:

Drawing G-190197, Feedwater, Condensate and Air Evacuation System Flow Diagram, Sheet 1 of 4, Rev. 76
Drawing G-190197, Feedwater, Condensate and Air Evacuation System Flow Diagram, Sheet 4 of 4, Rev. 55
Clearance Order Checklist 137435, Motor Driven Auxiliary Feedwater Control Valve (Pump A)
Design Basis Document, DBD/R87038/SD32 Auxiliary Feedwater System, Rev. 10

Service Water Booster Pump system:

Drawing G-190199, Service and Cooling Water System Flow Diagram, Sheet 7 of 13, Rev. 38
Clearance Order Checklist 136867, Service Water Booster Pump A Oil Change

Complete System Walkdown

Chemical and Volume Control System Health Report, dated 1/30/2007
List of Open Work Orders for System 2060, dated 1/22/2007
Drawing 5379-686, Chemical and Volume Control System Purification and Make-up Flow Diagram, Sheet 1 of 3, Rev. 51
Drawing 5379-686, Chemical and Volume Control System Purification and Make-up Flow Diagram, Sheet 2 of 3, Rev. 57
AR 208223, AOP-016 Entry When Placing A Seal Injection Filter in Service
AR 218404, Inferior Charging Pump Gaskets
Maintenance Rule documents for System 2060, Chemical and Volume Control
Design Basis Document DBD/R87038/SD21, Chemical and Volume Control System

1R05 Fire Protection

UFSAR Sections in Appendix 9.5.1A

3.1.1 Fire Zone 1 - Diesel Generator B Room
3.7 Fire Zone 25A - Turbine Building, Dedicated Shutdown Diesel Generator, Main Transformers, and Condensate Storage Tank
3.1.5.7 Fire Zone 22 - Control Room
3.9 Fire Zone 29 - Service Water Pump Area
3.7.4 Fire Zone 25D - Dedicated Shutdown Diesel Generator
3.1.5.2 Fire Zone 16 - Battery Room

Procedures

results from OST- 621, Diesel Generator CO2 System Cylinder Weight Test (Semi-Annual), dated 10/17/06
results from OST- 611-1, Low Voltage Fire Detection and Actuation System Zones 1 and 2 (Semi-Annual), dated 8/23/06
results from OST- 611-12, Low Voltage Fire Detection and Actuation System Zones 22 and 23 (Semi-Annual), dated 1/16/07
results from OST- 610, Unit 2 Portable Fire Extinguishers, Fire Hose Stations and Hoses (Monthly), dated 1/29/07
results from OST- 632, Unit Number 2 Fire Suppression Water System Flow Test (Three Year), dated 7/7/05
results from OST- 602, Unit Number 2 Fire Water System Flowpath Verification (Monthly) and Valve Cycling (Annual), dated 2/26/07

Other documents

Fire Drill Scenario 8, Auxiliary Building, 1st Level, Charging Pump Room, Rev. 2
OMM-003, Fire Protection Pre-Plans/Unit No. 2, Rev. 47

1R06 Flood Protection Measures

UFSAR Sections

2.4.10, "Flooding Protection Requirements".
3.6A.6, "Flooding Analysis".

Other

RNP-F/PSA-0009, Assessment of Internally Initiated Flooding Events
Procedure AOP-022, Loss of Service Water, Rev. 29
Drawing G-190495, Reactor Auxiliary Building Ground and Mezzanine Floor Plans Plumbing and Drainage, Rev. 13, 4/14/05
Drawing 5137-M-2014, Diesel Generator Room Floor Drain Modification, Rev. 2, 6/18/83
ESR Modification 94-00952, Diesel Generator Floor Drains Backing Up After Heavy Rains
System Description, SD-005, Emergency Diesel Generator System, Rev. 11
Design Basis Document, DBD/R87038/SD05, Rev. 0

1R07 Heat Sink Performance

Work Order 738503-01, Cleaning and Inspection of A [Compoment Cooling Water] Heat Exchanger

1R11 Licensed Operator Regualification

Plant Operational Events

Manual Rx Trip Due to 100 percent Load Rejection (NCR#00210311), 10/25/06
Clearance Caused a Secondary Plant Transient Quenching Valves (NCR#00197038), 6/10/06

Procedures

EPCLA-01, Emergency Control, Rev. 20
EPCLA-02, Emergency Action Level User's Guide, Rev. 14

OMM-001-5, Training and Qualification, Rev. 36
SAF-NGGC-2171, Medical Requirements for NRC Licensed Operators, Rev. 7
TAP-001, Training Conduct and Expectations, Rev. 4
TAP-303, Operations Examination Review and Validation, Rev. 7
TAP-403, Examination and Testing, Rev. 22
TAP-404, Training Documentation and Records, Rev. 16
TAP-409, Conduct of Simulator Training and Evaluation, Rev. 17
TAP-413, Simulator Scenario Based Testing, Rev. 0
TPP-200, Licensed Operator/Shift Technical Advisor Continuing Training Program, Rev. 9
TPP-206, Simulator Program, Rev. 16

Simulator Items

Performance Test 2.0.3, Interim Power Steady State Comparison Test, Rev. 8
Transient Test 4.1, Manual Reactor Trip, Rev. 12
Transient Test 4.4, Simultaneous Trip of All RCPs, Rev. 14
EST-50, Refueling Startup Procedure (Cycle 24 Simulator Validation), Rev. 41,
Scenario Based Test DSS-013-OIT, Rev. 0
Simulator Service Requests: 06-6968, 06-6893 06-7113 and 07-7193
Simulator Scenarios: DSS-019, Rev 10, DSS-039, Rev 5, DSS-046, Rev. 0
JPM IP-011, Check EDG Cooling IAW EPP-1, Loss of All AC Power, Rev. 13
JPM IP-009, Locally Align CV Isolation Valves Following SI (EPP-7), Rev. 8

Condition Reports

AR 224030, Incomplete Just-In-Time Training Attendance
AR 224095, Lack of Specific Guidance in EPCEA - 02, Section 8.28
AR 224245, Additional Information on Form 396

Medical Records
Remediation Packages

1R12 Maintenance Effectiveness

Action Requests

AR 166937, [Steam-Driven Auxiliary Feedwater Pump] Suction Pressure Fluctuations
AR 213638, PM-455A Found Out of Tolerance During MST-004

Maintenance Rule Documents

For system 3065 - Auxiliary Feedwater System

- Event Log Report for 11/05 - 12/06
- Scoping and Performance Criteria
- Monitoring Status
- System Health Report, January 16, 2007

Other Documents

Work Order 559409-01, Disassemble, inspect, and repair [steam traps] T1-1, T1-2, S-27, S-29
Work Order 600153-07, Repack valve AFW-V2-14A
Work Order 987283-01, Check Input/Output of PM-455A

Work Order 456696-01, Replace the Electrolytic Capacitors for PM-455A
Work Order 980176-01, PM-455A Found Out of Tolerance During MST-004

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Procedure OMM-048, Work Coordination and Risk Assessment, Rev. 28
Calculation RNP-F/PSA-0012, Online EOOS PSA Model, Rev. 6

1R15 Operability Evaluations

AR 189410, C Steam Generator Secondary Manway Leak
AR 78025, Unplanned [Limiting Condition for Operation] for A [Emergency Diesel Generator]
Procedure CAP-NGGC-0200, Corrective Action Program, Rev. 19
Results from procedure EST-064, Containment Isolation Valve Local Leakage Rate Survey (Refueling Interval Not to Exceed 2 Years), Rev. 10, completed 3/23/06, 9/5/06, & 11/2/06
Procedure OPS-NGGC-1305, Operability Determinations, Rev. 0
UFSAR, Figure 6.2.4-8, Containment Isolation Valves Penetrations P-25, P-26, P-28, P-29, P-30, P-31
UFSAR Section 6.2.4, Containment Isolation System

1R17 Permanent Plant Modifications

Engineering Change 64814, Install a Valve in Series with SI-888R to Perform Throttling
Procedure EGR-NGGC-0005, Engineering Change, Rev. 26

1R19 Post Maintenance Testing

Procedures

CM-736, ITT Models NH91 and NH92 Hydramotor Actuator Removal and Installation, Rev. 10
OST-201-2, [Motor-Driven Auxiliary Feedwater System] Component Test - Train B, Rev. 23
OST-207, Comprehensive Flow Test for the Motor Driven Auxiliary Feedwater Pumps, Rev. 45
OST-352-4, Comprehensive Flow Test for Containment Spray Pump B, Rev. 12
PIC-403, Calibration of ITT Type NH91, NH92 Nuclear Hydramotors, Rev. 14
MST-014, Steam Generator Pressure Protection Channel Testing, Rev. 34
LP-906, Steam Generator Pressure Channel 486 Loop #2 Channel #4, Rev. 7
OST-352-3, Comprehensive Flow test for Containment Spray pump A, Rev. 12

Drawings

G-190197, Feedwater, Condensate and Air Evacuation System Flow Diagram, Sheet 4 of 4, Rev. 55
5379-1082, Safety Injection System Flow Diagram, Sheet 2 of 5, Rev. 45
5379-1082, Safety Injection System Flow Diagram, Sheet 3 of 5, Rev. 26

Other

Work Order 704357-01, Hydromotor Changeout of Valve FCV-1424
Work Order 1030530-01, Setpoint as Found 26 Milli-Volts Out of Tolerance During MST-014 on PC-486
Work Order, Megger Motor MCC-5(13C) (CV Spray Pump A Suction)
Work Order, 689390, Limitorque Inspection on SI-844A

1R20 Refueling and Outage Activities

Condition Reports

AR 217272, Some outage lessons learned are not monitored by Outage & Scheduling to ensure each is addressed and closed.

AR 215733, Outage improvements identified in ... previous assessments were not appropriately tracked to completion

Self-Assessment Reports

214444, [Refueling Outage]-24 Pre-Outage Risk Assessment

196655, Shutdown Defense in Depth Self Assessment

Procedures

OMP-002, Outage Scope Management, Rev. 12

OMP-003, Shutdown Safety Function Guidelines, Rev. 26

OMP-004, Outage Risk Assessment, Rev. 18

OMM-046, Control of Key Safety Functions During Shutdown, Rev. 15

POP-002, Planned Outage Implementation, Rev. 13

1R22 Surveillance Testing

Procedures

EST-010, Containment Personnel Airlock Leakage Test (Semiannual), Rev. 27

OST-014, [Local Leak Rate Test] of Personnel Air Lock Door Seals, Rev. 11

OST-051, Reactor Coolant System Leakage Evaluation, Rev. 34

OST-101-7, Comprehensive Flow Test for Charging Pump B, Rev. 10

MST-016, Containment Pressure Protection Channel (Set I, II, and III) Testing, Rev. 20

OST-910, Dedicated Shutdown Diesel Generator (Monthly), Rev. 41

Drawings

G-190261, Penetration Pressurization Flow Diagram, Sheet 1 of 4, Rev. 26

G-190261, Penetration Pressurization Flow Diagram, Sheet 4 of 4, Rev. 34

Other

System Description SD-006, Engineered Safety Features System, Rev. 10

Calculation # RNP-I/INST-1044, Containment Pressure Loop Uncertainty and Scaling Calculation

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Guidance Documents, and Operating Manuals

CP-003, System Sampling Procedure, Rev. 65

CSP-NGGC-2505, Software Quality Assurance and Configuration Control of Business Computer Systems, Rev. 9

DOS-NGGC-0006, Personnel Exposure Investigations, Rev. 11

DOS-NGGC-0019, Whole Body Counter (WBC) Intercomparison Testing, Rev. 5

DOS-NGGC-0020, Whole Body Counter (WBC) System Calibration, Rev. 6

DOS-NGGC-0021, Whole Body Counter (WBC) System Operation, Rev. 15

HPP-110, Inspection and Maintenance of Respiratory Equipment, Rev. 29
HPP-111, Control and Use of Respiratory Protection Equipment, Rev. 33
HPP-113, Respirator Leak Testing, Rev. 7
HPS-NGGC-0005, Calibration of Portable Radiation/Contamination Survey Instruments, Rev. 7
HPS-NGGC-0009, Operation of Radiation/Contamination Survey Instruments/Equipment, Rev. 24
HPS-NGGC-0015, Managing Respirators, Rev. 5
HPS-NGGC-0016, Access Control, Rev. 3
OMM-014, Radiation Monitor Setpoints, Rev. 41
PLP-066, Respiratory Protection Program, Rev. 9
RST-003, Emergency Kit Inventory, Rev. 50
RST-008, Calibration of Radiation Monitor System Monitors R-1 Through R-8, Rev. 26
RST-009, Calibration of Radiation Monitor System Monitors R-9, R-30, R-31A, B, C, and R-33, Rev. 26
RST-020, Verification of Electronic Calibration of Radiation Monitoring System Monitors R-32A & B, Rev. 17
RST-023, Routine Respirator Inspection/Inventory, Rev. 24
SAF-NGGC-2170, Occupational Health Programs for Power Workers, Rev. 14
SIC-004, DCA 3090-2 Calibration, Rev. 10
SIC-012, Calibration and Operation of the NE Technology Electra Advanced Survey Ratemeter, Rev. 5
SIC-013, Calibration of the PNR-4, Rev. 11
SIC-014, Calibration and Operation of the MGP RAM Ion Meter, Rev. 4
SIC-020, Calibration of the FH-40F(FAG), Rev. 11
SIC-034, Calibration of the Portable Air Sampling Equipment, Rev. 6
SIC-Administrative Controls for Survey Instruments, Portable Air Samplers, and CAMS, Rev. 38

Records and Data

DOS-NGGC-0006, Personnel Exposure Investigations, Attachment 2, PEI #3452, Dated 10/31/06.
OMM-014, Radiation Monitor Setpoints, Attachments 10.1, Dated 11/19/06
RST-023, Routine Respirator Maintenance (Surveillance Records), Dated 04/21/06, 07/11/06, 08/08/06, 09/06/06, 10/06/06, 10/30/06, 11/27/06, and 12/29/06
Scott PosiChek3 Visual/Functional Test Results for Regulators 4821145, 182013, and 4821146, Dated 08/27/2003
Scott PosiChek3 Visual/Functional Test Results for Regulators 4821145, 182013, and 4821146, Dated 06/30/2005

CAP Documents

AR 00188458 WANO 2006 Review - RP1 Monitoring of Personnel Contamination
AR 00196955 Unanticipated TRM 3.25 Entry
AR 00194953 Radiation Monitor (R-31B) Internal Source Checks
AR 00204584 Self Assessment 176379 Weakness 1
AR 00204585 Self Assessment 176379 Weakness 2
AR 00205108 Electrical Loading in RCA Processing Building
AR 00209199 Unplanned AOP-005 Entry due to R-6 Alarm
AR 00214499 Software Upgrade was not IAW CSP-NGGC-2505

AR 00218715 SCBA Kits in the Control Room (Initial review, document not closed)

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Procedures, Instructions, and Guidance Documents

EMP-022, Gaseous Waste Release Permits, Revision (Rev.) 43

EMP-023, Liquid Waste Release and Sampling, Rev. 40

EMP-024, ODCM Surveillance, Rev. 53

EMP-025, Gaseous Effluent Sampling and Analysis Requirements, Rev. 39

RCP-106, Radiochemistry Laboratory Surveillance, Rev. 32

Reports and Manuals

2004 Annual Radioactive Effluent Release Report

2005 Annual Radioactive Effluent Release Report

Offsite Dose Calculation Manual, Rev. 27

Records and Data

Chemistry count room cross check results, 1st quarter 2005 - 2nd quarter 2006

E&C ODCM Supplemental Surveillance Log, R-22 (7/25 - 08/11/06)

Engineering Change 52464 (R-14 stack monitor replacement) 50.59 screening/evaluation

EST-014, Emergency Operations Facility Emergency Ventilation System Fan F1 (06/01/05, 06/26/06)

EST-016, Containment Purge System Fans HVE-1A and HVE-1B (05/10/04, 09/30/05)

EST-022, Spent Fuel Pool Exhaust System Fan HVE-15A (02/19/04, 06/16/05, 09/23/05)

Gaseous Waste Release Permit 06-208G, Batch Containment, Dated 10/27/06

Gaseous Waste Release Permit (Continuous Release) 06-205G, Reactor Aux Building, Dated 10/23/06

HPGe No. 1 Efficiency Calibration, various geometries (June 2005, March 2006)

HPGe No. 3 Efficiency Calibration, various geometries (June 2005, July 2006)

Liquid Scintillation Counter Calibration (02/22/05, 06/26/05, 09/29/05, 11/01/05, 07/16/06)

Liquid Waste Release Permit 06-200L, Waste Condensate Tank C, Dated 10/29/06

Liquid Waste Release Permit (Continuous Release) 06-196L, Dated 10/25/06

ODCM Change Form for Rev. 26, Dated 04/20/05

ODCM Change Form for Rev. 27, Dated 11/04/05

ODCM Change Form for Rev. 28, Dated 12/13/06

RNP Radiological Environmental Monitoring Gamma Isotopic and Tritium Report (sampling of U1 or U2 deep well and SC23 @ Black Creek; 2005 - 2006)

Robinson File No. 2-0-6-k, Summary of Unit No.1 Boiler Cleaning Solution Spill, 01/29/82

RST-010, Calibration of R-11 (06/01/06)

RST-011, Calibration of R-12 (08/12/04, 01/18/06)

RST-012, Calibration of R-14 (07/05/05, 11/29/05)

RST-016, Calibration of R-18 (07/20/04, 07/14/05)

Corrective Action Program (CAP) Documents

Action Request (AR) No. 153815, Unexpected isotopes during WWDS processing, Dated 03/16/05

AR No. 161293, HVE-15A failed bypass leak test on carbon cells, Dated 06/15/05

AR No. 164306, Containment vent samples have shown inconsistent tritium results, Dated 07/21/05
AR No. 171192, Liquid release permit errors, Dated 09/30/05
AR No. 175243, Unplanned ODCM entry due to R-20 spiking, Dated 11/06/05
AR No. 177293, Failure of detector in count room resulted in exceeding ODCM requirement for samples collected every 12 hours, Dated 11/28/05
AR No. 196522, R-22B not declared out-of-service and tracked as required by EMP-024, Dated 06/05/06
AR No. 197368, R-14 source checks, Dated 06/13/06
AR No. 201134, R-22 sample pump failure, Dated 07/25/06
AR No. 201610, R-22 auxiliary sample flow readings, Dated 07/29/06
AR No. 204584, Current training and qualification process for R-14, R-20, and R-21 radiation monitor calibration testing will challenge organization's ability to perform task, Dated 08/28/06
R-EC-06-01, Robinson Nuclear Plant Environmental and Chemistry Assessment Report, Dated 03/02/06
R-RP-05-01, Robinson Nuclear Plant Radiation Protection Assessment Report, Dated 11/21/05
Self-Assessment Report 176379, R-14 Replacement Effectiveness and R-20/21 Reliability, Dated 07/28/06
Self-Assessment Report 176351, Laboratory QC, Dated 05/11/06

2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program

Procedures, Guidance Documents, and Operating Manuals

CAP-NGGC-0200, Corrective Action Program, Rev. 18
CAP-NGGC-0201, Self-Assessment Program, Rev. 9
CAP-NGGC-0206, Corrective Action Program, Trending and Analysis, Rev. 1
EMP-001, Environmental Sampling, Rev. 40
EMP-003, Meteorological Tower Inspection, Rev. 5
EMP-004, Environmental Air Sampler Calibration, Rev. 15
EMP-033, RNP Land Use Census, Rev. 4
Offsite Dose Calculation Manual, Rev. 27
PM-180, Meteorology Tower Equipment Calibration, Rev. 4
SIC-008, Calibration and operation of the SAM9 Small Articles Monitor, Rev. 12
SIC-037, Calibration and Operation of the APTEC PMW-3 Personnel Monitor, Rev. 14
SIC-038, Calibration of the Gamma-60 Portal Monitor, Rev. 2

Records and Data

Air Sampler Calibration Work Sheets, APAC Sampler No. 1, Dated 04/27/05, 01/08/06 and 05/22/06
Air Sampler Calibration Work Sheets, APAC Sampler No. 2, Dated 04/22/05 and 04/28/06
Air Sampler Calibration Work Sheets, APAC Sampler No. 5, Dated 04/28/05 and 04/27/06
Air Sampler Calibration Work Sheets, APAC Sampler No. 7, Dated 04/27/05, 10/30/05 and 04/27/06
Air Sampler Calibration Work Sheets, APAC Sampler No. 60, Dated 04/22/05, 03/09/06 and 04/28/06
Canberra Personnel Monitor Calibration Data Sheets, Argos 5AB, Serial No. 0507-006, Dated 08/12/05 and 08/07/06

Canberra Personnel Monitor Calibration Data Sheet, Argos 5AB, Serial No. 0507-007, Dated 02/24/06
Canberra Personnel Monitor Calibration Data Sheets, Argos 5AB, Serial No. 0508-011, Dated 09/01/05 and 08/31/06
Canberra Personnel Monitor Calibration Data Sheets, Gem-5, Serial No. 0507-020, Dated 08/12/05 and 08/10/06
Canberra Personnel Monitor Calibration Data Sheets, Argos 5AB, Serial No. 0507-021, Dated 08/12/05 and 08/11/06
Environmental Weekly Sampling Work Sheet, Week of 01/02/07
Gamma-60 Calibration Data Sheets, Serial No. 910277, Dated 06/29/05 and 06/28/06
Gamma-60 Calibration Data Sheets, Serial No. 910280, Dated 06/29/05 and 06/21/06
Gamma-60 Calibration Data Sheets, Serial No. 910282, Dated 07/27/05 and 01/18/06
Part 61 Dry Active Waste Analysis
Radiological Environmental Operating Reports 2004 and 2005, H. B Robinson Steam Electric Plant, Unit 2
Results of Environmental Cross Check, Progress Energy, Harris Energy & Environmental Center, First Quarter 2005, Rev. 1, Second Quarter 2005, Third Quarter 2005, Fourth Quarter 2005, and First Quarter 2006
SAM9 Calibration Data Sheets, Serial No. 134, Dated 02/03/05 and 02/01/06
SAM9 Calibration Data Sheets, Serial No. 146, Dated 08/02/05 and 03/07/06
SAM9 Calibration Data Sheets, Serial No. 148, Dated 01/12/05 and 01/12/06
Work Order Package 00904213 01, Calibration of Met Tower Equipment, Dated 11/09/06

CAP Documents

AR No. 00178572, Radiological Environmental Monitoring Program Enhancement, Dated 12/12/05
AR No. 00204953, Cross Check Results Outside Acceptable Range, Dated 08/30/06
AR No. 00208739, Door to Met Tower Damaged/Vandalism, Dated 10/26/06
AR No. 00209267, Environmental #21 TLD Missing, Dated 10/13/06
AR No. 00213623, Cs-137 Found in Food Crop Sample, Dated 11/16/06
Progress Energy, Harris Nuclear Plant, Nuclear Assessment Section, Report File No. H-EC-06-01, Harris Environmental and Chemistry Assessment, Dated 04/26/06
Progress Energy, Robinson Nuclear Plant, Nuclear Assessment Section, Report File No. R-EC-04-01, Robinson Nuclear Plant Environmental and Chemistry Assessment Report, Dated 11/21/05
Progress Energy, Robinson Nuclear Plant, Nuclear Assessment Section, Report File Nos. R-RP-05-01 and R-RP-06-01, Robinson Nuclear Plant Radiation Protection Assessment Reports, Dated 11/21/05 and 11/26/06, Respectively

40A1 Performance Indicator Verification (Resident Inspectors)

Procedures

RCP-133, Determination of [Reactor Coolant System Radiochemical, E-Bar and I-131 Dose Equivalent, Rev. 12
CP-003, Systems Sampling Procedure, Rev. 65

Other

Chemistry Data Management Reactor Coolant Dose Equivalent Iodine Results for the period October 2005 - December 2006

Reactor Coolant System Leakage Spreadsheet for the period January 2006 - December 2006

Drawing 5379-353, Primary Sampling System Flow Diagram, Sheet 1 of 1, Rev. 26

System Description SD-015, Sampling System, Rev. 6

Reactor Coolant System Leakage Evaluation results from January 2006 - December 2006

4OA1 Performance Indicator Verification (Health Physics Inspectors)

Procedures

CAP-NGGC-0200, Corrective Action Program, Rev. 18

EMP-022, Gaseous Waste Release Permits, Rev. 43

EMP-023, Liquid Waste Release and Sampling, Rev. 40

Records and Data

2004 and 2005 Annual Radiological Effluent Release Reports

DRD Alarm Evaluations Report

Gaseous Waste Release Permit - Batch Containment, Release No. 06-208G, Dated 10/27/06

Gaseous Waste Release Permit - Continuous Release, Release No. 06-205G, Dated 10/23/06

Liquid Waste Release Permit (Batch Releases), Release No. 06-200L, Dated 10/29/06

Liquid Waste Release Permit (Continuous Release), Release No. 06-196L, Dated 10/25/06

RNP Workers Exceeding RWP Dose and/or Rate Alarm Set Points Report

4OA2 Identification and Resolution of Problems

Preventive Maintenance Request, PMR 99-001, Replace Electrolytic Capacitors in the Analog Electro-Hydraulic System

AR 210311, Manual Reactor Trip Due to 100 percent Load Rejection

Operating Experience, OE 20838, The #2 Governor Valve Failed Close

4OA3 Event Follow-up

Licensee Event Report 2006-001-00, Manual Reactor Trip Due to Failure of a Turbine Governor Valve Electro-Hydraulic Control Card

4OA5 Independent Spent Fuel Storage Installations

Procedures

ISFS-009, 7P-ISFSI High Radiation, Rev. 6

RST-025, Surveillance of the 7P-Independent Spent Fuel Storage Installation, Rev. 13

RST-030, Surveillance of the 24P-Independent Spent Fuel Storage Installation, Rev. 1

Records and Data

Area TLD Trending Results, Monitoring Period: 07/11 - 10/03/06, Dated 12/05/06

Certificate of Compliance 1004, USA/72-1004, Amendment 8, 12/05/2005

Robinson Nuclear Plant, Survey No. 011006-5, Dated 01/10/06

RST-025, Surveillance of the 7P-Independent Spent Fuel Storage Installation, Data Sheets,
Dated 02/22/05, 12/31/05, and 09/01/06

RST-030, Surveillance of the 24P-Independent Spent Fuel Storage Installation, Rev. 1, Data
Sheets, Dated 01/10/06, 03/13/06, 06/19/06 and 09/12/06