



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

October 28, 2014

Mr. Mike Glover  
Vice President – Robinson Plant  
Duke Energy Progress, Inc.  
H. B. Robinson Steam Electric Plant  
Unit 2  
3581 West Entrance Road  
Hartsville, South Carolina 29550

**SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000261/2014004**

Dear Mr. Glover:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your H. B. Robinson Steam Electric Plant, Unit 2. On October 16, 2014, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

No NRC-identified or self-revealing findings were identified during this inspection. However, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the 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, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at H. B. Robinson Steam Electric Plant, Unit 2.

M. Glover

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In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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 Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/***

George T. Hopper, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000261/2014004  
w/Attachment: Supplemental Information

cc Distribution via ListServ

M. Glover

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Letter to Mike Glover from George T. Hopper dated October 28, 2014.

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000261/2014004

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-261

License Nos.: DPR-23

Report No.: 05000261/2014004

Licensee: Duke Energy Progress, Inc.

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

Location: 3581 West Entrance Road  
Hartsville, SC 29550

Dates: July 1, 2014 through September 30, 2014

Inspectors: K. Ellis, Senior Resident Inspector  
C. Scott, Resident Inspector  
M. Riches, Resident Inspector (Acting)  
A. Nielson, Senior Health Physicist, 2RS8  
R. Hamilton, Senior Health Physicist, 2RS7  
J. Rivera, Health Physicist, 2RS1, 4OA1  
R. Kellner, Health Physicist, 2RS6, 4OA1

Approved by: George T. Hopper, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000261/2014004, July 1, 2014 through September 30, 2014; H. B. Robinson Steam Electric Plant, Unit 2; Integrated Inspection Report.

The report covered a three-month period of inspection by resident inspectors and announced inspections by reactor inspectors. One licensee-identified violation of very low safety significance (Green) was identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated June 02, 2011. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

### Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number is listed in Section 4OA7 of this report.

Enclosure

## REPORT DETAILS

### Summary of Plant Status

The unit began the inspection at 100 percent power and remained there through the end of the inspection period.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R04 Equipment Alignment (71111.04)

##### a. Inspection Scope

##### Partial Walkdown

The inspectors verified that critical portions of the selected systems were correctly aligned by performing partial walkdowns. The inspectors selected systems for assessment because they were a redundant or backup system or train, were important for mitigating risk for the current plant conditions, had been recently realigned, or were a single-train system. The inspectors determined the correct system lineup by reviewing plant procedures and drawings. Documents reviewed are listed in the Attachment.

The inspectors selected the following three systems or trains to inspect:

- Emergency Diesel Generator (EDG) B while EDG A was out of service for planned maintenance
- A and B Motor Driven Auxiliary Feedwater (MDAFW) Pumps while Steam Driven Auxiliary Feedwater (SDAFW) was out of service for planned maintenance
- Dedicated Shutdown Diesel Generator (DSDG)

##### Complete Walkdown

The inspectors verified the alignment of the Unit 2 Service Water system. The inspectors selected this system for assessment because it is a risk-significant mitigating system. The inspectors determined the correct system lineup by reviewing plant procedures, drawings, the updated final safety analysis report, and other documents. The inspectors reviewed records related to the system outstanding design issues, maintenance work requests, and deficiencies. The inspectors verified that the selected system was correctly aligned by performing a complete walkdown of accessible components.

To verify the licensee was identifying and resolving equipment alignment discrepancies, the inspectors reviewed corrective action documents, including condition reports and outstanding work orders. The inspectors also reviewed periodic reports containing information on the status of risk-significant systems, including maintenance rule reports and system health reports. Documents reviewed are listed in the Attachment.

Enclosure

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ)a. Inspection ScopeQuarterly Inspection

The inspectors evaluated the adequacy of selected fire plans by comparing the fire plans to the defined hazards and defense-in-depth features specified in the fire protection program. In evaluating the fire plan, the inspectors assessed the following items:

- control of transient combustibles and ignition sources
- fire detection systems
- water-based fire suppression systems
- gaseous fire suppression systems
- manual firefighting equipment and capability
- passive fire protection features
- compensatory measures and fire watches
- issues related to fire protection contained in the licensee's corrective action program

The inspectors toured the following four fire areas to assess material condition and operational status of fire protection equipment. Documents reviewed are listed in the Attachment.

- Rod Control Room
- B Emergency Diesel Generator Room
- 4160 Switchgear Room
- Mezzanine deck of the Turbine Building

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)a. Inspection ScopeInternal Flooding

The inspectors reviewed related flood analysis documents and walked down the area listed below containing risk-significant structures, systems, and components susceptible to flooding. The inspectors verified that plant design features and plant procedures for flood mitigation were consistent with design requirements and internal flooding analysis assumptions. The inspectors also assessed the condition of flood protection barriers



and drain systems. In addition, the inspectors verified the licensee was identifying and properly addressing issues using the corrective action program. Documents reviewed are listed in the Attachment.

- Component Cooling Water Pump Room

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11)

a. Inspection Scope

Routine Operator Regualification Review: On August 26, 2014, the inspectors observed operators in the plant's simulator during licensed operator regualification training to verify that the operator performance was adequate, evaluators were identifying and documenting crew performance issues and training was being conducted in accordance with station procedures. The inspectors observed a shift crew's response to the scenario listed below. Documents reviewed are listed in the Attachment.

- This scenario consisted of fuel failures with an automatic reactor trip due to low reactor coolant forced flow, followed by a seismic event that ruptured the steam header. A failure of B main steam isolation valve created an unisolable steam break, which was complicated by a steam generator tube rupture on B steam generator.

Operators were required to perform a rapid depressurization of the reactor coolant system to limit the radioactive release to the environment through the ruptured steam generator tube and out the unisolable steam line break. The inspectors assessed the following:

- licensed operator performance
- the ability of the licensee to administer the scenario and evaluate the operators
- the quality of the post-scenario critique
- simulator performance

Review of Licensed Operator Performance: The inspectors observed licensed operator performance in the main control room during a downpower to 98% from 100% to support testing on the Auxiliary Feedwater system and the Rod Control system.

The inspectors assessed the following:

- use of plant procedures
- control board manipulations
- communications between crew members
- use and interpretation of instruments, indications, and alarms

- use of human error prevention techniques
- documentation of activities
- management and supervision

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors assessed the licensee's treatment of the two issues listed below to verify the licensee appropriately addressed equipment problems within the scope of the maintenance rule (10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"). The inspectors reviewed procedures and records to evaluate the licensee's identification, assessment, and characterization of the problems as well as their corrective actions for returning the equipment to a satisfactory condition. The inspectors also interviewed system engineers and the maintenance rule coordinator to assess the accuracy of performance deficiencies and extent of condition. Documents reviewed are listed in the Attachment.

- AR 492296, Engine Driven Fire Pump Maintenance Rule Concerns not visible in decision making
- AR 699900, Trip of Water Cooled Condensing Unit (WCCU) 1B

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the four maintenance activities listed below to verify that the licensee assessed and managed plant risk as required by 10 CFR 50.65(a)(4) and licensee procedures. The inspectors assessed the adequacy of the licensee's risk assessments and implementation of risk management actions. The inspectors also verified that the licensee was identifying and resolving problems with assessing and managing maintenance-related risk using the corrective action program. Additionally, for maintenance resulting from unforeseen situations, the inspectors assessed the effectiveness of the licensee's planning and control of emergent work activities. Documents reviewed are listed in the Attachment.

- Reviewed the weekly Risk Mitigation Plan for 9/8 to 9/15
- Reviewed the Critical Activity Plan and associated protected equipment during removal of the A EDG for testing
- Reviewed the protected equipment while the engine driven fire pump was out of service for maintenance
- Reviewed the protected equipment during A Safety Injection Pump and HVH-6A out of service for maintenance

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors selected the six operability determinations or functionality evaluations listed below for review based on the risk-significance of the associated components and systems. The inspectors reviewed the technical adequacy of the determinations to ensure that technical specification operability was properly justified and the components or systems remained capable of performing their design functions. To verify whether components or systems were operable, the inspectors compared the operability and design criteria in the appropriate sections of the technical specification and updated final safety analysis report to the licensee's evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the attachment.

- AR 695891, C Component Cooling Water (CCW) Pump Outboard seal leakage high
- AR 705419, Removal of A and F flow elements from averaging circuit for R-14, Plant Stack Radiation Monitor
- AR 709463, Leaking seat on AFW-079, SDAFW Pump Lube Oil Cooler Relief Valve
- AR 699365, AFW-33 failed as-found lift test
- AR 700539, Motor-operated potentiometer failure on the manual voltage regulator for the Dedicated Shutdown Diesel Generator
- AR 704902, EDG jacket water cooling system seismic concerns

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)a. Inspection Scope

The inspectors verified that the plant modification listed below did not affect the safety functions of important safety systems. The inspectors confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems and components. The inspectors also verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition. Additionally, the inspectors evaluated whether system operability and availability, configuration control, post-installation test activities, and changes to documents, such as drawings, procedures, and operator training materials, complied with licensee standards and NRC requirements. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications. Documents reviewed are listed in the Attachment.

- EC 91633, Diesel Fire Pump Engine Replacement

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the six maintenance activities listed below to verify the work performed was completed correctly and the test activities were adequate to verify system operability and functional capability.

- WO 13384322, OST-303-2, Service Water Booster Pump B, July 28, 2014
- WO 13316129, Post Maintenance EDG Ventilation Exhaust (HVE-17), Operability Check, July, 21, 2014
- WO 13354016, OST-251-2 "B" RHR Pump and Components Test following breaker replacement , July 31, 2014
- WO 02180018, PM-124, Perform Thermal Overload Testing on Breaker 2M (V6-33E, Containment Recirculation Cooler [HVVH-4] Selective Service Water Inlet Valve) on MCC-5, September 15, 2014
- WO 02246524, OST-202, Steam Driven Auxiliary Feedwater System Component Test, September 16, 2014
- WO 02265161, OST-750-1 and OST-751 following maintenance on the Control Room Emergency Ventilation System – Train A, September 12, 2014

The inspectors evaluated these activities for the following:

- Acceptance criteria were clear and demonstrated operational readiness.
- Effects of testing on the plant were adequately addressed.
- Test instrumentation was appropriate.
- Tests were performed in accordance with approved procedures.
- Equipment was returned to its operational status following testing.
- Test documentation was properly evaluated.

Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with post-maintenance testing. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the six surveillance tests listed below and either observed the test or reviewed test results to verify testing adequately demonstrated equipment operability and met technical specification and licensee procedural requirements. The inspectors evaluated the test activities to assess for preconditioning of equipment, procedure adherence, and equipment alignment following completion of the surveillance. Additionally, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with surveillance testing. Documents reviewed are listed in the attachment.

Routine Surveillance Tests

- OST-401-1, EDG A Slow Speed Start, Rev. 61
- OST-908-3, Component Cooling Water Pump B Test, Rev. 3
- MST-021, Reactor Protection Logic Train 'B' at Power, Rev. 37
- MST-022, Safeguard Relay Rack Train "A", Rev. 22

In-Service Tests (IST)

- OST-302-1, Service Water Pumps A & B In-service Test, Rev. 68

Reactor Coolant System Leak Detection

- OST-051, Reactor Coolant System Leakage Evaluation (Every 72 Hours during Steady State Operation and within 12 Hours after Reaching Steady State Operation), Rev. 47

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b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on July 9, 2014. The inspectors observed licensee activities in the simulator and/or technical support center to evaluate implementation of the emergency plan, including event classification, notification, and protective action recommendations. The inspectors evaluated the licensee's performance against criteria established in the licensee's procedures. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

2. RADIATION SAFETY

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

Hazard Assessment and Instructions to workers: During facility tours, the inspectors directly observed labeling of radioactive material and postings for radiation areas, High Radiation Areas (HRAs), and Locked High Radiation Areas (LHRAs) established within the Radiologically Controlled Area (RCA) of the auxiliary building and radioactive waste (radwaste) processing and storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas. The inspectors reviewed survey records for several plant areas including surveys for airborne radioactivity, gamma surveys with a range of dose rate gradients, and pre-job surveys for Forced Outage (FO) R229F3. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. The inspectors observed radiological briefings by Health Physics (HP) personnel and reviewed Radiation Work Permit details to assess communication of radiological control requirements and current radiological conditions to workers.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected LHRA locations. Changes to procedural guidance for LHRA and Very High Radiation Area (VHRA) controls were discussed with HP supervisors.

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Controls and their implementation for storage of irradiated material within the spent fuel pool were reviewed and discussed in detail. Established radiological controls (including airborne controls) were evaluated for selected FO R229F3 work, including reactor cavity decontamination, steam generator (SG) manway removal, and seal table incore detector replacement. In addition, licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations were reviewed and discussed.

The inspectors observed HP technician proficiency during the surveying and downposting of a LHRA in the radwaste building. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for FO R229F3 reactor cavity decontamination, SG manway removal, and seal table incore detector replacement. Procedures for the use of personnel dosimetry (ED alarms, extremity dosimetry, multibadging in high dose rate gradients, etc.) as well as worker response to dose and dose rate alarms were reviewed.

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA using small article monitor, personnel contamination monitor, and portal monitor instruments. The inspectors discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. The inspectors also observed the daily source check of a personnel contamination monitor. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Problem Identification and Resolution: Nuclear Condition Reports (NCRs) associated with radiological hazard assessment and control were reviewed and assessed. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures.

Radiation protection activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12; Technical Specifications (TS) Sections 5.4 and 5.7; 10 CFR Parts 19 and 20; and approved licensee procedures. Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Program Reviews: The inspectors reviewed the 2013 Annual Radioactive Effluent Release Report for consistency with the requirements in the Offsite Dose Calculation Manual (ODCM) and Technical Specifications. Radioactive effluent monitor inoperability

periods and compensatory sampling were reviewed and discussed with plant staff. No changes have been made to the ODCM since the last inspection. Planned 2015 ODCM changes were discussed with licensee staff.

Walk-Downs and Observations: The inspectors walked-down selected components of the gaseous and liquid discharge systems to ascertain material condition, configuration and alignment. To the extent practical, the inspectors observed the material condition of abandoned in place liquid waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. The inspectors observed collection and analysis of gaseous effluent samples (noble gas, iodine, particulates) from two release points and preparation of gaseous effluent release permits. The inspectors walked-down portions of the containment and auxiliary building ventilation systems, to ascertain material condition, configuration, and alignment. In addition, the inspectors reviewed the most recent air cleaning surveillance testing results for the auxiliary building ventilation system.

Sampling and Analyses: In addition to observing collection of gaseous effluent samples, the inspectors observed a chemistry technician verifying plant stack flow rates and performing daily verification checks of effluent radiation monitors. The inspectors reviewed analysis results and release reports generated during a recent SG tube leak and discussed how the results will be reported in the 2014 annual report. The results of the chemistry count room's inter-laboratory comparison program were reviewed and discussed with cognizant licensee personnel.

Dose Calculations: The inspectors reviewed several liquid and gaseous release permits, and monthly gaseous/liquid effluent dose calculation summaries. The inspectors reviewed the contributions to public dose from reported abnormal releases. The site's 10 CFR 61 analysis was reviewed for expected nuclide distribution from the aspects of quantifying effluents, the treatment of hard to detect nuclides, and determining appropriate calibration nuclides for instrument counting libraries. The inspectors also reviewed the licensee's most recent Land Use Census results.

Ground Water Protection: The inspectors reviewed the licensee's continued implementation of the industry's Ground Water Protection Initiative (Nuclear Energy Institute 07-07) as part of Inspection Procedure 71124.07.

Problem Identification and Resolution: Selected corrective action program documents associated with the effluent monitoring and control program, including NCRs and audits, were reviewed and assessed. The inspectors verified that problems were being identified at an appropriate threshold and resolved in accordance with licensee procedures. Documents reviewed are listed in the report Attachment.

b. Findings

No findings were identified.



## 2RS7 Radiological Environmental Monitoring Program (REMP)

### a. Inspection Scope

REMP Implementation: The inspectors observed routine sample collection and surveillance activities as required by the licensee's environmental monitoring program. The inspectors noted the material condition and operability of airborne particulate filter and iodine cartridge sample stations and observed collection of weekly air samples at selected monitoring locations. The inspectors checked environmental thermoluminescent dosimeters for material condition at 10 monitoring sites including several indicator locations and a control location that was greater than 10 miles away. The inspectors also observed collection of surface water samples at 4 locations including Black Creek and the ash basin. The inspectors observed the collection of composite water samples at the east and west retention ponds. In addition, the inspectors reviewed and evaluated land use census results, changes to the ODCM, monitoring for hard-to-detect radionuclides, and sample collection/processing activities.

The inspectors reviewed the last two calibration records for selected environmental air samplers. The inspectors also reviewed the 2013 Radiological Environmental Operating Report and the 2013 Annual Radioactive Effluent Report. The inspectors reviewed the 2014 Accreditation Reports for the vendor labs used to process environmental samples. The inspectors reviewed the interlaboratory comparison results for all 4 quarters of 2013 and the first quarter of 2014. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

Ground Water Protection: The inspectors discussed program guidance for spills, leaks, and unexpected discharges with licensee staff and reviewed recent entries into the 10 CFR 50.75(g) decommissioning file. The inspectors reviewed and discussed the licensee's program for monitoring of structures, systems, and components with the potential to release radioactive material to the environment. Potential effluent release points due to onsite surface water bodies were also evaluated. In addition, the inspectors reviewed recent groundwater sampling results.

Meteorological Monitoring Program: The inspectors observed the physical condition of the tower and its instrumentation and discussed equipment operability and maintenance history with licensee staff. The inspectors evaluated transmission of locally generated meteorological data to other licensee groups such as main control room operators. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed the last two calibration records for applicable tower instrumentation. The inspectors also evaluated measurement data recovery for 2013.

Problem Identification and Resolution: The inspectors reviewed selected NCRs in the areas of radiological environmental monitoring and meteorological tower maintenance. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

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REMP implementation, meteorological monitoring, and groundwater protection activities were reviewed against the guidance and requirements of 10 CFR Part 20; Appendices E and I to 10 CFR Part 50; TS Section 5.0; UFSAR Chapter 2; ODCM; Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment"; Safety Guide 23, "Onsite Meteorological Programs"; Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program" – 1979; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

a. Inspection Scope

Waste Processing and Characterization: During inspector walk-downs, accessible sections of the liquid and solid radwaste processing systems were assessed for material condition and conformance with system design diagrams. Inspected equipment included storage tanks, transfer piping, resin dewatering and packaging components, and abandoned radwaste processing equipment. The inspectors discussed component function, processing system changes, and radwaste program implementation with licensee staff.

The inspectors reviewed the 2013 Annual Radioactive Effluent Report and radionuclide characterizations from 2013 - 2014 for each major waste stream. For Spent Resin Storage Tank resin and Dry Active Waste, the inspectors evaluated analyses for hard-to-detect nuclides, reviewed the use of scaling factors, and examined quality assurance comparison results between licensee waste stream characterizations and outside laboratory data. Waste stream mixing and concentration averaging methodology for resin and filter waste streams were evaluated and discussed with radwaste staff. The inspectors also reviewed the licensee's procedural guidance for monitoring changes in waste stream isotopic mixtures.

Radioactive Material Storage: During walk-downs of indoor and outdoor radioactive material storage areas, the inspectors observed the physical condition and labeling of storage containers and the posting of Radioactive Material Areas. The inspectors also reviewed licensee procedural guidance for storage and monitoring of radioactive material.

Transportation: The inspectors evaluated shipping records for consistency with licensee procedures and compliance with NRC and Department of Transportation (DOT) regulations. The inspectors reviewed emergency response information, DOT shipping package classification, waste classification, and radiation survey results. Licensee procedures for opening and closing Type B shipping casks were compared to Certificate

of Compliance requirements. Since there were no shipments available for observation during the week of inspection, the inspectors reviewed qualification records for radworkers who perform shipping preparation activities.

Problem Identification and Resolution: The inspectors reviewed NCRs in the areas of shipping and radwaste processing. The inspectors evaluated the licensee's ability to identify and resolve the issues.

Radwaste processing, radioactive material handling, and transportation activities were reviewed against the guidance and requirements contained in the licensee's Process Control Program, UFSAR Chapter 11, 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71, the Branch Technical Position on Waste Classification (1983), and NUREG-1608. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 2 PIs listed below. The inspectors reviewed plant records compiled between July 2013 and June 2014 to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data. Documents reviewed are listed in the Attachment.

Cornerstone: Initiating Events

- SCRAMS with complications
- Unplanned SCRAMS

Cornerstone: Mitigating Systems

- Heat removal system

Occupational Radiation Safety Cornerstone: The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from December 2013 through July 2014. For the assessment period, the inspectors reviewed ED alarm logs and NCRs related to controls for exposure significant areas. Documents reviewed are listed in the Attachment.

Public Radiation Safety Cornerstone: The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from May, 2013 through June, 2014. For the assessment period, the inspectors reviewed cumulative and projected doses to the public contained in liquid and gaseous release permits and corrective actions related to Radiological Effluent Technical Specifications/ODCM issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

The inspectors screened items entered into the licensee's corrective action program in order to identify repetitive equipment failures or specific human performance issues for follow-up. The inspectors reviewed condition reports, attended screening meetings, or accessed the licensee's computerized corrective action database.

.2 Operator Work-Around Annual Review

a. Inspection Scope

The inspectors performed a detailed review of the licensee's operator work-around, operator burden, and control room deficiency lists for the station in effect on July 21, 2014 to verify that the licensee identified operator workarounds at an appropriate threshold and entered them in the corrective action program. The inspectors verified that the licensee identified the full extent of issues, performed appropriate evaluations, and planned appropriate corrective actions. The inspectors also reviewed compensatory actions and their cumulative effects on plant operation. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

#### 4OA3 Follow-up of Events and Notices of Enforcement Discretion

##### (Closed) LER 2013-001-01, Non-Environmentally-Qualified Splice Rendered Post Accident Monitoring (PAM) Instrumentation Channel Inoperable

On October 6, 2013, during work to replace the limit switches of the CVC-204B, Letdown Line Isolation Valve, the licensee discovered that a non-environmentally qualified butt splice was installed on a wire for the closed limit switch. The improper wiring for the limit switch did not meet environmental qualification (EQ) requirements and rendered the Post-Accident Monitoring (PAM) Instrumentation function of containment isolation valve position indication inoperable. The licensee's cause investigation determined that the improper splice was installed in 1992 and that on multiple occasions the function was inoperable for a period of time greater than allowed by technical specifications TS 3.3.3, PAM Instrumentation Limiting Condition of Operation (LCO). The licensee determined that the cause of this event was a human performance event in which a technician failed to use the proper heat shrink insulators as directed by CM-309. The licensee entered this issue in the corrective action program as NCR 640902 and replaced the improper splice with the appropriate material. The inspectors reviewed the corrective actions and determined that they were adequate. Revision 1 was issued to include the system/component failure codes. The enforcement aspects of this Licensee Event Report (LER) were documented in IR 05000261/2014003 Section 4OA3.1 Follow-up of Events and Notices of Enforcement Discretion. Revision 1 of the LER was reviewed and no additional findings were identified and no additional violation of NRC requirements occurred. This LER is closed.

##### (Closed) LER 2014-001-01, Reactor Trip Due to a Two-Out-of-Three Logic Signal from Steam Generator Water Level Protection Train B Logic Matrix

On January 9, 2014, with the unit in Mode 1 at 100 percent power, a turbine trip and an automatic reactor trip occurred during the performance of surveillance test procedure MST-013, Steam Generator Water Level Protection Channel Testing. The reactor trip occurred during Step 8.2.85 of MST-013, when the bistable switch was placed in the test position (opens the two LC-494A1-X contacts). One channel contact (contact 2-6 on relay LC-496A1-X(B)) was unknowingly open due to foreign material lodged between the contact faces. This half-trip condition did not show on the control room annunciator panel. When the two LC-494A1-X contacts opened, the two-out-of-three logic was completed. For corrective actions, the licensee inspected both trains of relay racks to identify and remove any potential foreign material. The licensee also tested both trains of reactor protection relays to verify no foreign material was present. Additionally, the licensee plans to replace the wire labels in the reactor protection and safeguards relay racks during the next two refueling outages. The inspectors also reviewed post-trip activities to verify that the licensee identified and resolved event-related issues prior to restarting the plant. Revision 1 was issued to include the System/Component codes, add Energy Industry Identification System (EIIIS) functional identifiers to the narrative and describe the half trip condition. The enforcement aspects of this LER were document in IR 05000261/2014003 Section 4OA3.1 Follow-up of Events and Notices of Enforcement Discretion. Revision 1 of the LER was reviewed and no additional findings

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were identified and no additional violation of NRC requirements occurred. This LER is closed.

(Closed) LER 2013-003-01, "Reactor Trip on 4KV Bus Undervoltage during Load Transfer"

On November 5, 2013, with the unit at 19 percent power, an automatic reactor trip occurred due to a loss of voltage on 4kv Buses 1 and 2. The reactor trip occurred while operators were transferring loads from the Start-up transformer to the Auxiliary transformer as part of power ascension, following refueling outage 28. During the breaker operation, a broken operating rod on breaker 52/7 prevented the breaker from closing and resulted in a momentary loss of power to 4KV Bus 2 and 4KV Bus 1. For corrective actions, the licensee replaced the operating rod for the failed breaker and performed post maintenance testing to verify operation, prior to returning the unit to service. The inspectors reviewed the corrective actions and determined that they were adequate. The inspectors also reviewed post-trip activities to verify that the licensee identified and resolved event-related issues prior to restarting the plant. Revision 1 was issued to add the system/component identifiers, include EISS codes to the narrative and add additional description of the failure. The enforcement aspects of this LER were document in IR 05000261/2014002 Section 1R12 Maintenance Effectiveness. Revision 1 of the LER was reviewed and no additional findings were identified and no additional violation of NRC requirements occurred. This LER is closed.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On October 16, 2014, the resident inspectors presented the inspection results to Mr. Glover and other members of the licensee's staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which met the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

- 10 CFR 26.205(d)(7), Work Hour Controls, requires, in part that the licensee shall control the work hours of individuals to less than a weekly average of 54 hours, calculated using an average period of six weeks. Contrary to this requirement, seven covered workers violated the work hour limits on thirteen occasions. Specifically, following the Spring 2014 forced outage, the licensee failed to recode all covered workers to an on-line status. This finding was more than minor because if left uncorrected, the failure to change the individual coding from off-line to on-line status would have allowed all covered workers onsite to exceed work hour limits, and could lead to a more significant safety concern. This violation was determined to be

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of very low safety significance because no significant events or human performance issues were directly linked to personnel fatigue as a result of the hours worked. The licensee entered this issue into their CAP as CR 698782.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

T. Cosgrove, Plant General Manager  
S. Connelly, Licensing  
H. Curry, Training Manager  
D. Douglas, Maintenance Manager  
R. Gideon, Vice President  
M. Glover, Director – Site Operations  
R. Hightower, Licensing/Reg. Programs Supervisor  
D. Hoffman, Nuclear Oversight Manager  
K. Holbrook, Operations Manager  
C. Sherman, Radiation Protection Superintendent  
L. Martin, Engineering Director  
K. Moser, Outage & Scheduling Manager  
S. Williams, Chemistry Manager  
C. Spencer, Supervisor - Chemistry

#### NRC personnel

G. Hopper, Chief, Reactor Projects Branch 4

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Closed

05000261/2013-001-01	LER	Non-Environmentally-Qualified Splice Rendered Post Accident Monitoring (PAM) Instrumentation Channel Inoperable
05000261/2014-001-01	LER	Reactor Trip Due to a Two-Out-of-Three Logic Signal from Steam Generator Water Level Protection Train B Logic Matrix
05000261/2013-003-01	LER	Reactor Trip on 4KV Bus Undervoltage during Load Transfer



## LIST OF DOCUMENTS REVIEWED

### **Section 1R04: Equipment Alignment**

#### Procedures

OP-903, Service Water System, Rev. 133  
OP-604, Emergency Diesel Generators, Rev. 104  
OP-602, Dedicated Shutdown System, Rev. 70  
OMM-048, Work Coordination and Risk Assessment, Rev. 56

#### Drawings

G-190199, Service Cooling Water System Flow Diagram, Shts 1 - 13

#### Other documents

Service Water System Health Report, 7/1/2014 – 9/30/2014

### **Section 1R05: Fire Protection**

#### Procedures

OMM-003, Fire Preplans, Rev.63

#### Drawings

HBR2-11937, Fire Pre-plan Sheet 32, Rod Control Room, Rev. 1  
HBR2-11937, Fire Pre-plan Sheet 11, B Emergency Diesel Generator Room, Rev. 4  
HBR2-11937, Fire Pre-plan Sheet 59, 4160 Switchgear Room, Rev. 1  
HBR2-11937, Fire Pre-plan Sheet 58, Mezzanine deck of the Turbine Building, Rev. 3

### **Section 1R06: Flood Protection Measures**

#### Other documents

RNP-F/PSA-0009 Rev. 2  
EMDC141R, Robinson Internal Flood Design Basis and Considerations (Presentation)

### **Section 1R11: Licensed Operator Requalification**

#### Procedures

OP-105, Maneuvering the Plant when Greater Than 25% Power, Rev. 57

#### Other documents

14-8 Exam 003 Licensed Operator Continuing Training, Rev. 0

### **Section 1R12: Maintenance Effectiveness**

#### Action Requests

699949, Loss of Neutral on WCCU-1B  
696512, WCCU Pressure Switch Reliability Plan  
699900, Trip of WCCU 1B  
597746, WCCU-1A is not running when demanded to run

Procedures

OST-646, Fire Suppression Water System Engine Driven Fire Pump Test, Rev. 32  
 ADM-NGGC-0101, Maintenance Rule Program, Rev. 24  
 FP-012, Fire Protection Systems Minimum Equipment and Compensatory Actions, Rev. 18  
 OST-751, Control Room HVAC R-1 Initiation and ERFIS Point Test (Quarterly), Rev. 9

Other documents

EC 91633, Replace Engine Driven Fire Pump, Rev. 27  
 November 22, 2011 Maintenance Rule Expert Panel Meeting Minutes  
 MR a(1) action plan, Fire protection system  
 MR a(1) action plan, HVAC, Water Cooled Condensing Units

Work Orders

13416349, WCCU-1B Tripped  
 13426052, Perform Inspection to verify through wall connectors

**Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation**Procedures

OMM-048,  
 FP-012, Fire Protection Systems Minimum Equipment and Compensatory Actions, Rev. 18

Action Requests

708116, WCCU's not required to be posted by OMM-048  
 710658, HVH-6B Risk Mitigation  
 709240, Complex Activity Challenge Process for EC91633

Other documents

Risk Mitigation Plan, 7/27-8/3, 2014  
 Risk Mitigation Plan, 9/15-9/22, 2014  
 Risk Mitigation Plan, 9/29-10/5, 2014  
 Complex Activity Plan, Replace the Prime Mover for the Diesel Engine Driven Fire Pump  
 Critical Activity Plan, A Safety Injection Pump

**Section 1R15: Operability Evaluations**Procedures

OPS-NGGC-1305, Operability Determinations, Rev. 11

Other documents

EC 81842, CCW Pump Seal Leakage Evaluation, Rev. 0  
 EC 97379, Disable R-14 Plant Vent Stack Flow Sensors FE-14A and FE-14F  
 Functionality Assessment, R-14 Plant Vent Flow Rate Monitor  
 ANSI N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities  
 Past Operability Determination for AFW-079, SDAFW Pump Lube Oil Cooler Relief Valve  
 G-190204-A, Emergency Diesel Generator System Flow Diagram, Rev. 20  
 EC 97936, EDG JW Expansion Tanks, Rev. 0  
 EGR-NGGC-0320, Civil/Structural Operability Reviews, Rev. 7

**Section 1R18: Plant Modifications**Other documents

CSP-NGGC-0007,  
 EGR-NGGC-0153,  
 EGR-NGGC-0005,  
 AD-EG-ALL-1901,  
 AD-EG-ALL-1903,

Action Requests

704047, Install HASP on Hutch for EDFP Controller  
 703819, Eng EC Rev needed for EDFP engine replacement  
 709275, EDFP Exceeded 7 day out of service time  
 709231, Post Mod Test challenges for EC91633  
 709235, EC91633: Multiple interferences affect insulation  
 709233, EC91633: EDFP Loaded start test not preplanned  
 709264, EDFP Battery cracked  
 709249, EC 91633 piping installed incorrectly  
 709237, EC91633: Testing of LP-35 CK not planned in WO  
 709236, EC91633: Engine block heater not supplied with engine  
 709308, EC91633: Setup of cooling water regulator not in schedule  
 709959, During OST-646 did not receive alarm as required  
 709962, EDFP Tripped during OST-646  
 710175, EDFP Right Angle Drive Vibration  
 710223, Failed contact on DC-CU board for EDFP  
 710227, Unable to complete OST-655  
 709963, MST-E-125DC-BATT-009 cannot be performed as written  
 708912, Incorrect Grout type specified in EC 91633  
 710646, Repeat failure of DC-CU Board in EDFP

**Section 1R19: Post Maintenance Testing**Procedures

PM-124, Testing of Thermal Overload Relays for MCC-5, Rev. 27  
 OST-202, Steam Driven Auxiliary Feedwater System Component Test, Rev. 84  
 OST-751, Control Room HVAC R-1 Initiation and ERFIS Point Test (Quarterly), Rev. 9  
 OST-750-1, Control Room Emergency Ventilation System – Train A (Monthly), Rev. 18

Work Orders

02180018, Perform Thermal Overload Test on MCC-5, Breaker 2M, V6-33E, HVH-4 Selective Inlet Containment Recirc Cooler

**Section 1R22: Surveillance Testing**Procedures

MST-021, Reactor Protection Logic Train B at Power, Rev. 37  
 MST-022, Safeguard Relay Rack Train A, Rev. 22  
 OST-051, Reactor Coolant System Leakage Evaluation (Every 72 Hours during Steady State Operation and within 12 Hours after Reaching Steady State Operation), Revision 47

OST-302-1, Service Water Pumps A & B In-service Test, Rev. 68  
 OST-401-1, EDG A Slow Speed Start, Rev. 61  
 OST-908-3, Component Cooling Water Pump B Test, Rev. 3

**Section 1EP6: Drill Evaluation**

Emergency Response Organization Integrated Drill Report, July 9, 2014

Action Requests

703990, EP Drill upgrade discussion

**Section 2RS1: Radiological Hazard Assessment and Exposure Controls**

Procedures, Guidance Documents, and Manuals

AP-031, Administrative Controls For Entry into Locked and Very High Radiation Areas, Rev. 58  
 CAP-NGGC-0200, Condition Identification and Screening Process, Rev. 39  
 HPP-001, Radiologically Controlled Area Surveillance Program, Rev. 124  
 HPP-004, Radiological Control of Tools and Equipment, Rev. 69  
 HPP-007, Handling and Storage of Contaminated and Radioactive Materials, Rev. 44  
 HPP-018, Control and Inventory of Radioactive Sources, Rev. 28  
 HPP-SUR-003, Airborne Radioactivity Surveys, Rev. 3  
 HPS-NGGC-0003, Radiological Posting, Labeling and Surveys, Rev 16  
 HPS-NGGC-0009, Operation of Radiation/Contamination Survey Instruments/Equipment,  
 Rev. 10  
 HPS-NGGC-0013, Personnel Contamination Monitoring, Decontamination, and Reporting,  
 Rev. 17  
 RST-004, Sealed Source Leak Test, Rev. 48  
 SIC-041, Calibration and Operation of Canberra Personnel Monitors, Rev. 18  
 SIC-044, Annual Calibration and Operation of the Canberra Cronos-4 Contamination Monitor,  
 Rev. 3  
 TE-RP-ALL-2000, Preparation of Radiation Work Permit, Rev. 0  
 TE-RP-ALL-4003, Placement of Personnel Dosimetry for Non-Uniform Radiation Fields, Rev. 0

Records and Data

AP-031, Attachment 10.2, LHRA Downgrade Form, RWB Truck Bay/2<sup>nd</sup> Level, 7/23/14  
 AP-031, Attachment 10.4, LHRA Key Inventory Log (Emergency Key Boxes), 2/14/14 and  
 5/20/14  
 HPP-018, Control and Inventory of Radioactive Sources, 6/26/14  
 HPS-NGGC-0009, Attachment 1, Survey Instrument Source Check Record (ARGOS/  
 GEM-5/CRONOS), 7/19/14 – 7/25/14  
 National Source Tracking System, Annual Inventory Reconciliation Report, 1/15/14  
 RCP-105, Attachment 10.2, Radioactive Source Certification Sheets, Tc-99, Source Serial  
 Numbers 95288, 95289, and 95290 (used for daily operability checks of personnel  
 monitors), 12/19/13  
 RST-004, Sealed Source Leak Test, 6/19/14  
 RWP 2603, FO R229F3 Refuel Activities, Rev. 11  
 RWP 2607, FO R229F3 Seal Table Activities, Rev. 2  
 RWP 2615, FO R229F3 SG Primary Manways and Diaphragms, Rev. 3  
 Survey (including air sample result), HPP-008, Attachment 10.1, Steam Generator Survey  
 Records for A, B, and C, 3/19/14

Survey (including air sample result), RNP-M-20140404-11, Seal Table Room (Upper Level) "E" Incore Detector, 4/4/14  
 Survey (including air sample result), RNP-M-20140508-5, WHUT Filter Change, 5/8/14  
 Survey, RNP-M-20131107-6, Middle Pipe Alley Down Post, 11/7/13  
 Survey, RNP-M-20131209-3, ISFSI 24P, 12/9/13  
 Survey, RNP-M-20131210-2, ISFSI 7P Annual Survey, 12/10/13  
 Survey, RNP-M-20140515-1, Middle Pipe Alley HRA Downgrade Survey, 5/15/14  
 Survey, RNP-M-20140305-2, Quarterly Truck Bay Area Survey, 3/4/14  
 Survey, RNP-M-20140424-1, Waste Holdup Tank Room, 4/24/14  
 Survey, RNP-M-20140623-2, Rad Waste Truck Bay / Bunkers, 6/23/14  
 Survey, RNP-M-20140723-3, Truck Bay LHRA Downpost, 7/22/14  
 Survey, RNP-M-20140723-4, RW 2<sup>nd</sup> Level Downpost, 7/22/14

#### CAP Documents

NCR 650358  
 NCR 651100  
 NCR 655534  
 NCR 666204  
 NCR 666819  
 NCR 671712  
 NCR 672703  
 NCR 673352  
 NCR 674436  
 NCR 674777

#### **Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment**

##### Procedures, Guidance Documents, and Manuals

H.B. Robinson Steam Electric Plant, Unit No 2, Off-Site Dose Calculation Manual (ODCM), Rev. 33  
 EMP-022, Gaseous Waste Release Permits, Rev. 55  
 EMP-023, Liquid Waste Release and Sampling, Rev. 60  
 EMP-024, ODCM Surveillance, Rev. 63  
 EMP-025, Gaseous Effluent Sampling and Analysis Requirements, Rev. 57  
 RCP-101, Preparation of Effluent and Non-effluent Samples, Rev. 11  
 EC-14-002, RNP Chemistry Technical Information Document, Radiological Groundwater Protection Program, Draft Rev. 0

##### Records and Data Reviewed

H.B. Robinson Steam Electric Plant, Unit No 2, 2013 Annual Radioactive Effluent Release Report, 4/30/2014  
 H.B. Robinson Steam Electric Plant, Unit No 2, Independent Spent Fuel Pool Storage Installation Annual Radioactive Effluent Release Report [2012], 2/8/2013  
 H.B. Robinson Steam Electric Plant, Unit No 2, Independent Spent Fuel Pool Storage Installation Annual Radioactive Effluent Release Report [2013], 2/24/2014  
 RNP Record Search Report, Decommissioning [50.75(g)], 5/1/2013 through 7/1/2013  
 EST-017, Auxiliary Building and Emergency Diesel Ventilation Systems Fans HVE-2A, HVE-2B, HVS-5, HVS-6, HVE-17, HVE-18  
 Memorandum, 2012 Land Use Census, 3/30/2013

Memorandum, 2013 Land Use Census, 3/19/2014  
 Spreadsheet, Secondary System Loss Accountability during "C" Steam Generator Tube Leak, 7/23/2014  
 Summary of Condenser Air Ejector Gaseous and Steam Generator Blowdown Radiation Monitor Trends during "C" Steam Generator Tube Leak Incident  
 List of R-20 Samples, 5/13/2013 to 5/30/2013  
 List of R-14 Samples, 10/9/2013 to 10/16/2013  
 List of Decommissioning File Record Entries [50.75(g)], 5/1/2013 to 7/1/2014  
 List of H. B. Robinson High Risk Systems, Structures, and Components [Groundwater Protection]  
 Gaseous Radioactive Waste Release Permit Number G-2014-0142  
 Liquid Radioactive Waste Release Permit Numbers: L-2014-00050, L-2014-0051, L-2014-0054, L-2014-0058, L-2014-0062, L-2014-00068, L-2014-0072, L-2014-00079, L-2014-0080, L-2014-00085, L-2014-0091, L-2014-0092, L-2014-0187, and L-2014-0188  
 Results of Radiochemistry Cross Check Program, Robinson 1<sup>st</sup> Quarter 2013, 9/9/2013  
 Results of Radiochemistry Cross Check Program, Robinson 2nd Quarter 2013, 11/12/2013  
 Results of Radiochemistry Cross Check Program, Robinson 2nd Quarter 2013, 3/6/2014  
 Results of Radiochemistry Cross Check Program, Robinson 3rd Quarter 2013, 12/3/2013  
 Results of Radiochemistry Cross Check Program, Robinson 1st Quarter 2013, 3/6/2014  
 Report, Impact of Tritium Release from Lake Robinson at that Robinson Nuclear Plant for 2013  
 RNP Unit #2 Shift Logs, page 831 – 832, 10/9/2013 to 10/10/2013  
 Calibration Record, RST-012, Calibration of Radiation Monitoring System Monitor R-14, 11/29/2005  
 Calibration Record, RST-012, Calibration of Radiation Monitoring System Monitor R-14, 10/5/2011  
 OMM-007, Attachment 10.1, EIR – ITS/TRM/ODCM/RG 1.97 [Radiation Monitor Inoperability], 25 Attachments for Various Radiation Monitors Dated Between 5/13/2013 to 6/24/2014  
 Work Order (WO) 0199321101, EST-017 (YM) AUX BLDG & EDG VENT SYSTEMS FANS, 2/6/2013  
 WO 0173895102, RST-012 Calibration of RMS Monitor, 5/31/2011  
 WO 0194938502, RST-012 Calibration of RMS Monitor, 2/5/2013

#### CAP Documents

NCR 589598, 631338, 633949, 634945

### **Section 2RS7: Radiological Environmental Monitoring Program (REMP)**

#### Procedures and Guidance Documents

Offsite Dose Calculation Manual, Rev. 33  
 EMP-001, Environmental Sampling, Rev. 61  
 EMP-003, Meteorological Tower Inspection, Rev. 9  
 EMP-004, Environmental Air Sampler Operation and Calibration, Rev. 18  
 CAP-NGGC-0200, Condition Identification and Screening Process, Rev. 36

#### Records and Data

2013 Annual Radiological Environmental Operating Report  
 2013 Annual Radioactive Effluent Report  
 Environmental Weekly Sampling Work Sheet, 05/20/2013  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 01, 3/12/2014

Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 02, 3/13/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 03, 3/15/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 04, 3/15/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 05, 3/12/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 06, 3/13/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 07, 3/12/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 55, 3/13/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 60, 3/13/2014  
 Environmental Air Sampler Calibration Worksheet, Sampler AP/AC 61, 3/12/2014  
 2013 Land Use Census Report, 03/19/2014  
 Results of Environmental Cross Check Program, Robinson Nuclear Plant, 1<sup>st</sup> quarter, 2<sup>nd</sup> quarter, 3<sup>rd</sup> quarter, 4<sup>th</sup> quarter 2013 and 1<sup>st</sup> quarter 2014  
 Vendor 2014 accreditation report for Duke EnRad Laboratory at McGuire Nuclear Plant  
 Vendor 2013 accreditation report for GEL Laboratories  
 Meteorological Tower Instrument Data Recovery Results, January 2013 through January 2014  
 PM-180, Calibration of Met Tower, Rev. Performed 4/2/2014  
 PM-180, Calibration of Met Tower, Rev. Performed 8/7/2013

#### CAP Documents

Self-Assessment Radiological Effluents, Radiological Environmental Monitoring and Groundwater Program, 7/10/2014  
 NCR 619106  
 NCR 619462  
 NCR 633568  
 NCR 634509  
 NCR 651749

#### **Section 2RS8: Radioactive Material Processing and Transportation**

##### Procedures, Manuals, and Guides

HPS-NGGC-0001, Radioactive Material Receipt and Shipping Procedure, Rev. 31  
 HPS-NGGC-0002, Vendor Cask Utilization Procedure, Rev. 20  
 HPP-007, Handling and Storage of Contaminated and Radioactive Materials, Rev. 44  
 SD-023, Operations Training – Waste Disposal System, Rev. 9  
 CAP-NGGC-0200, Condition Identification and Screening Process, Rev. 39  
 Process Control Program, Rev. 6

##### Shipping Records and Radwaste Data

2013 Annual Radioactive Effluent Release Report  
 Shipment 13-0082, LSA, Filters  
 Shipment 13-0085, LSA, Resin  
 Shipment 14-0033, LSA, Outage Equipment  
 Shipment 14-0044, Type A, FME Fragment  
 Shipment 14-0048, SCO, Outage Equipment  
 Shipment 14-0057, LSA, DAW  
 Sample Data Set Evaluation Form, DAW, 4/28/14  
 Sample Data Set Evaluation Form, RCS Filters, 4/5/14  
 Sample Data Set Evaluation Form, SRST Resin, 5/21/13

CAP Documents  
NCR 00667983

**Section 40A1: Performance Indicator Verification**

RNP-F/PSA-0057, NRC Mitigating System Performance Index (MSPI) Basis Document, Revision 16

REG-NGGC-0009, NRC Performance Indicators and Monthly Operating Report Data, Rev. 12

RETS/ODCM Radiological Effluent Quarterly Summary, 2nd quarter 2013 – 1st quarter 2014

Gaseous Radioactive Waste Release Permit Number G-2014-0142

Liquid Radioactive Waste Release Permit Numbers: L-2014-0187, and L-2014-0188

List of Dose Rate Alarms, December 2013 – July 2014

NCR 668947, 673352, 676737

**Section 40A2: Identification and Resolution of Problems**

Procedures

OPS-NGGC-1316, Aggregate Risk Impact Assessment Program, Rev.3

Other documents

Operator Burden 14-002

Operator Work Around, 14-001

Operator Work Around, 13-005

Operator Work Around, 13-004

Operator Work Around, 13-003

Operator Burden 14-003

Operator Burden 14-001

Operator Burden 13-001

**Section 40A2: Identification and Resolution of Problems**

Action Requests

687678, Revision of LERs is warranted

**Section 40A7: Licensee Identified Violations**

Action Requests

698782, Quick Cause Evaluation, Emp Center not identifying violations

705843, Review of impacted personnel not included in CR evaluation

701271, Coding Error Result in Part 26 Violation



## LIST OF ACRONYMS

ADAMS	Agency Documents Access and Management System
AR	Action Request
CCW	Component Cooling Water
DOT	Department of Transportation
DSDG	Dedicated Shutdown Diesel Generator
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EIIS	Energy Industry Identification System
EQ	Environmental Qualification
FO	Forced Outage
HP	Health Physics
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IST	In-service Tests
LCO	Limiting Condition of Operation
LER	Licensee Event Report
LHRA	Locked High Radiation Area
MDAFW	Motor Driven Auxiliary Feedwater
NCR	Nuclear Condition Report
NCV	Non-Cited Violation
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicator
PAM	Post-Accident Monitoring
PARS	Publically Available Records
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
SDAWF	Steam Driven Auxiliary Feedwater
SDP	Significance Determination Process
SG	Steam Generator
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area
WCCU	Water Cooled Condensing Unit
WO	Work Order