



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

July 20, 2015

Mr. R. Michael Glover
Vice President - Robinson Plant
H. B. Robinson Steam Electric Plant
Duke Energy Progress, Inc.
3581 West Entrance Road
Hartsville, South Carolina 29550

**SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED
INSPECTION REPORT 05000261/2015002**

Dear Mr. Glover:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your H. B. Robinson Steam Electric Plant, Unit 2. On July 16, 2015, the NRC inspectors discussed the results of this inspection with members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one NRC-identified finding of very low safety significance (Green). This finding involved a violation of NRC requirements. Additionally, NRC inspectors documented one Severity Level IV violation under the traditional enforcement process. This finding also involved a violation of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of the NCVs, 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 H. B. Robinson Steam Electric Plant, Unit 2.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at the H. B. Robinson facility.

M. Glover

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In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC's "Agency Rules of Practice and Procedure," 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 Agencywide Document Access and Management 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 05000261/2015002

w/Attachment: Supplementary Information

cc: Distribution via Listserv

M. Glover

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Letter to R. Michael Glover from George T. Hopper dated July 20, 2015.

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION
REPORT 05000261/2015002

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-261

License No: DPR-23

Report No: 005000261/2015002

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

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: April 1, 2015 through June 30, 2015

Inspectors: K. Ellis, Senior Resident Inspector
C. Scott, Resident Inspector
D. Jackson, Project Engineer, 1R01, 1R19, 1R22, 4OA1
M. Coursey, Reactor Inspector, 1R08
A. Nielsen, Senior Health Physicist, 2RS2, 2RS4, 4OA1
W. Pursley, Health Physicist, 2RS1, 2RS3, 4OA1
J. Rivera, Health Physicist, 2RS5

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

Enclosure

SUMMARY OF FINDINGS

IR 05000261/2015002, April 1, 2015, through June 30, 2015; Duke Energy Progress, Inc., H.B. Robinson Steam Electric Plant, Unit 2, Operability Determinations and Functionality Assessments, Plant Modifications.

The report covered a three-month period of inspection by resident inspectors and regional inspectors. There was one NRC-identified and one self-revealing violation documented in this report. 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 April 29, 2015. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas" dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. A self-revealing Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified for the licensee's failure to follow EGR-NGGC-0005, Engineering Change, during a modification of the reactor protection system (RPS). This resulted in having inadequate work instructions associated with engineering change (EC) 75690 and EC 86690, which resulted in a cross-tied configuration of independent trains of the RPS and the DC electrical system. The licensee entered this into the corrective action program (CAP) as action request (AR) 729926 and took immediate corrective actions to cut the cable and restore the independence of safety trains for both systems.

The failure to have adequate work instructions for engineering changes as required by procedure EGR-NGGC-0005 was a performance deficiency. This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the cross-tied configuration rendered the RPS and DC electrical subsystem inoperable because the required independence and redundancy of systems were eliminated. The finding was screened using IMC 0609 Appendix A Exhibit 2.C, Reactivity Control Systems, dated June 19, 2012, and was determined to be of very low safety significance (Green) because the finding did not result in a mismanagement of reactivity by the operators. The performance deficiency had a cross-cutting aspect of teamwork in the area of human performance because the licensee failed to coordinate their activities between the work control planners and engineering to ensure nuclear safety was maintained. (H.4) (Section 1R18)

Other Findings

- SL IV. An NRC-identified Severity Level IV NCV of 10 CFR 50.73, Licensee Event Report System, was identified for the licensee's failure to submit a licensee event report (LER) within 60 days after discovery of a condition which was prohibited by the plant's Technical Specifications (TS). The issue was entered into the licensee's CAP as condition report (CR) 743653. The licensee submitted the LER to restore compliance.

The licensee's failure perform an adequate reportability evaluation and subsequently submit an LER within 60 days after discovery of a condition which was prohibited by the plant TSs as required by 10 CFR 50.73 was a performance deficiency. This performance deficiency was assessed using traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. The inspectors determined the significance of this violation was a Severity Level IV NCV using Section 6.9.d.9 of the NRC's Enforcement Policy. Cross cutting aspects are not assigned to traditional enforcement violations. (Section 1R15)

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at 100 percent rated thermal power (RTP). The unit was shutdown for a planned refueling outage on May 12, 2015, and returned to 100 percent RTP on June 29, 2015, and remained at or near RTP for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

a. Inspection Scope

.1 Summer Readiness of Offsite and Alternate AC Power System

The licensee did not implement equipment or procedure changes that potentially affected operation or reliability of offsite and alternate AC power systems since the last time the inspectors assessed grid reliability. The inspectors reviewed the material condition of offsite and onsite alternate AC power systems (including switchyard and transformers) by performing a walkdown of the switchyard. Documents reviewed are listed in the Attachment.

.2 Seasonal Extreme Weather Conditions

The inspectors conducted a detailed review of the station's adverse weather procedures written for extreme high temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year had been placed into the work control process and/or corrected before the onset of seasonal extremes. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures before the onset of seasonal extreme weather conditions. Documents reviewed are listed in the Attachment. The inspectors evaluated the following risk-significant systems:

- service water system
- containment ventilation system

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04 – 5 samples)

a. Inspection Scope

.1 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 four systems or trains to inspect:

- 'A' auxiliary feedwater water (AFW) pump while the 'B' AFW pump was out-of-service (OOS) for maintenance
- 'A' and 'B' spent fuel pool pumps during core offload
- 'B' service water booster pump (SWBP) while the 'A' SWBP was OOS
- 'A' and 'B' residual heat removal pumps during shutdown cooling

.2 Complete Walkdown

The inspectors verified the alignment of the residual heat removal 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's 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.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05A/Q – 6 samples)

a. Inspection Scope

.1 Quarterly 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 plans, 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 five fire areas to assess material condition and operational status of fire protection equipment. Documents reviewed are listed in the Attachment.

- Auxiliary Building Second Level, fire zone 15
- Safety Injection Pump Room, fire zone 3
- Containment, fire zone 24
- Residual Heat Removal Pump Pit, fire zone 27
- Turbine Building Mezzanine Level, fire zone 25

.2 Annual Inspection

The inspectors evaluated the licensee's fire brigade performance during drills on April 14, 2015, and April 24, 2015, and assessed the brigade's capability to meet fire protection licensing basis requirements. The inspectors observed the following aspects of fire brigade performance:

- capability of fire brigade members
- leadership ability of the brigade leader
- use of turnout gear and fire-fighting equipment
- team effectiveness
- compliance with site procedures

The inspectors also assessed the ability of control room operators to combat potential fires, including identifying the location of the fire, dispatching the fire brigade, and sounding alarms. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07 –1 sample)

a. Inspection Scope

Annual Review

The inspectors verified the readiness and availability of the 'B' component cooling water heat exchanger to perform its design function by reviewing performance test data, verifying the licensee uses the periodic maintenance method outlined in EPRI NP-7552 and verifying correct categorization and receipt of maintenance under the Maintenance Rule. Additionally, the inspectors verified that the licensee had entered any significant heat exchanger performance problems into the corrective action program and that the licensee's corrective actions were appropriate. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08 – 1 sample)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities

From May 18, through May 22, 2015, the inspectors conducted an onsite review of the implementation of the licensee's inservice inspection (ISI) program for monitoring degradation of the reactor coolant system boundary, risk-significant piping and component boundaries, and containment boundaries in Unit 2.

The inspectors either directly observed or reviewed the following non-destructive examinations (NDEs), mandated by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) (Code of Record: 2007 Edition with 2008 Addenda) to evaluate compliance with the ASME Code, Section XI and Section V requirements, and if any indications or defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement. The inspectors also reviewed the qualifications of the NDE technicians performing the examinations to determine whether they were current, and in compliance, with the ASME Code requirements.

- Penetrant Testing (PT), SI-239/18, pipe to elbow weld, Class 2 (reviewed)
- PT, SI-239/19, pipe to elbow weld, Class 2 (reviewed)
- Ultrasonic Testing (UT), SI-239/18, pipe to elbow weld, Class 2 (observed)
- UT, SI-239/19, pipe to elbow weld, Class 2 (observed)

The inspectors reviewed the following welding activities, qualification records, and associated documents in order to evaluate compliance with procedures, and the ASME Code, Section XI and Section IX requirements. Specifically, the inspectors reviewed the work order, repair and replacement plan, weld data sheets, welding procedures, procedure qualification records, welder performance qualification records, and NDE reports.

- Replace auxiliary spray line check valve, valve to pipe weld, 2-inch, Class 1 (reviewed)
- Replace valve SI-870A, valve to pipe weld, 2-inch, Class 2 (observed)

During non-destructive surface and volumetric examinations performed since the previous refueling outage, the licensee did not identify any relevant indications that were analytically evaluated and accepted for continued service; therefore, no NRC review was completed for this inspection procedure (IP) attribute.

Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities

The inspectors observed portions of the bare metal visual (BMV) examination of the reactor vessel upper head penetrations, and reviewed NDE reports for penetration numbers 15, 23, 40, 64, and 66 to determine if the examinations were performed in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). Additionally, the inspectors reviewed the BMV inspection report to determine if the required examination coverage was achieved, and if limitations were recorded in accordance with the licensee procedures.

The licensee did not identify any relevant indications that were accepted for continued service. Additionally, the licensee did not perform any welding repairs to the vessel head penetrations since the beginning of the last Unit 2 refueling outage; therefore, no NRC review was completed for these IP attributes.

Boric Acid Corrosion Control Inspection Activities

The inspectors reviewed the licensee's Boric Acid Corrosion Control (BACC) Program activities to determine if the activities were implemented in accordance with the commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," and applicable industry guidance documents. Specifically, the inspectors performed an onsite records review of procedures, and the results of the licensee's containment walkdown inspections performed during the current refueling outage. The inspectors also interviewed the BACC Program owner, conducted an independent walkdown of containment to evaluate compliance with licensee's BACC program requirements, and

verified that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACC Program and CAP.

The inspectors reviewed the following engineering evaluations completed for evidence of boric acid leakage, to determine if the licensee properly applied applicable corrosion rates to the affected components, and properly assessed the effects of corrosion-induced wastage on structural or pressure boundary integrity, in accordance with the licensee procedures.

- nuclear condition report (NCR) 635630, RHR-PMP-B active leakage
- NCR 664335, SI-869A active leak
- NCR 664339, SI-868C active leak and packing adjustment

The inspectors reviewed the following condition reports and associated corrective actions related to evidence of boric acid leakage, to evaluate if the corrective actions completed were consistent with the requirements of the ASME Code, and 10 CFR Part 50, Appendix B, Criterion XVI.

- NCR 716759, boric acid leakage at PI-153
- NCR 695333, boric acid leakage at CVC-296A
- NCR 702840, boric acid leakage at CVC-296D

Steam Generator Tube Inspection Activities

The inspectors verified that for the Unit 2 steam generator tubes, no inspection activities were required this refueling outage, in accordance with the requirements of the ASME Code, the licensee's Technical Specifications, and Nuclear Energy Institute 97-06, "Steam Generator Program Guidelines."

Identification and Resolution of Problems

The inspectors reviewed a sample of ISI-related issues entered into the CAP to determine if the licensee had appropriately described the scope of the problem, and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, requirements.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11 – 2 samples)

a. Inspection Scope

.1 Resident Inspector Quarterly Review of Licensed Operator Requalification

The inspectors observed an evaluated simulator scenario administered to an operating crew conducted in accordance with the licensee's accredited requalification training program. The scenario evaluated the operators' ability to perform a scheduled plant shutdown to 0 percent reactor power, and perform a cooldown to establish Cold Shutdown conditions.

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

Documents reviewed are listed in the Attachment.

.2 Resident Inspector Quarterly Review of Licensed Operator Performance in the Actual Plant/Main Control Room

The inspectors observed licensed operator performance in the main control room during the Unit 2 reactor shutdown for a planned refueling outage on May 12, 2015. The inspectors reviewed the operator performance and adherence to the operating procedures for reduction of reactor power, removing load from the unit's main turbine, and entry into Mode 3.

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 – 1 sample)a. Inspection Scope

The inspectors assessed the licensee's treatment of the issue 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.

- CR 740991, Maintenance Rule Screening of Pressurizer PORV Limit Switches EQ Qualified Life Exceedance

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 samples)a. Inspection Scope

The inspectors reviewed the 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.

- May 10-11, 2015, yellow risk condition during testing of the main steam safety valves
- Reviewed the protected equipment during replacement of 2G transformer feeder cable replacement
- Reviewed the risk outage plan for the planned refueling outage
- Reviewed the protected equipment during outage risk configuration 2A1, 'A' emergency diesel generator (EDG) OOS
- Reviewed the risk plan and associated protected equipment during the Unit 2 low pressure turbine rotor lift
- Reviewed the protected equipment during outage risk configuration 6B, 'B' EDG, E-2 Bus, and B DC train OOS

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 3 samples)

a. Inspection Scope

The inspectors selected the 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 TSs and updated final safety analysis report (UFSAR) 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.

- Operability of 'B' EDG after failed 24-hour surveillance test of 'A' EDG, CR 748734
- 'B' motor driven auxiliary feedwater water pump flow control valve failed while in manual, CR 749333
- Measurement and test equipment 2172518 out of tolerance (OOT), usage history needs evaluation, CR 726206

b. Findings

Introduction: An NRC-identified Severity Level IV NCV of 10 CFR 50.73, Licensee Event Report System, was identified for the licensee's failure to submit a Licensee Event Report (LER) within 60 days after discovery of a condition which was prohibited by the plant's TS.

Description: On January 19, 2015, the licensee identified an OOT condition with the measurement and test equipment used during the station battery charger A-1 surveillance test on June 18, 2014. The OOT condition resulted in a failed surveillance test and the subsequent inoperability of the A-1 charger. TS 3.8.4, DC Sources – Operating, Condition A required that if one DC electrical power system is inoperable, the DC system be restored to operable status within two hours and Condition B required that the unit be in Mode 3 in six hours. On November 4, 2014, the battery charger was in service for approximately 16 hours and on December 2, 2014, the battery charger was in service until January 19, 2015. Since these two occurrences exceeded the Condition A and B required actions following the failed surveillance test, the station was in violation of TS 3.8.4. During a review of the condition report on April 14, 2015, for the OOT test equipment, the inspectors noted that the reportability evaluation was inadequate and notified the licensee. The licensee reformed the evaluation and determined the issue

was reportable. The licensee submitted the report on June 9, 2015, exceeding the 60-day reporting requirement of 10 CFR 50.73(a).

Analysis: The licensee's failure perform an adequate reportability evaluation, and subsequently submit an LER within 60 days after discovery of a condition which was prohibited by the plant TSs as required by 10 CFR 50.73, was a performance deficiency. This performance deficiency was assessed using traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. The inspectors determined the significance of this violation was a Severity Level IV violation using Section 6.9.d.9 of the NRC's Enforcement Policy. Cross-cutting aspects are not assigned to traditional enforcement violations.

Enforcement: Section 50.73(a) of 10 CFR required the holder of an operating license under 10 CFR Part 50 to submit an LER following discovery of a condition which was prohibited by TSs within 60 days after the discovery. Contrary to the above, the licensee did not submit LER 05000261-2015-003 within 60 days after discovery of the TS violation on January 19, 2015. The licensee's corrective actions included submitting the LER on June 9, 2015, to restore compliance. Because this finding was of very low safety significance, was not repetitive or willful, and was entered into the licensee's CAP as CR 743653, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy and designated as NCV 05000261/2015002-01, Failure to Timely Report Required Information as Required by 10 CFR 50.73.

1R18 Plant Modifications (71111.18 – 2 samples)

a. Inspection Scope

The inspectors verified that the plant modifications 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 75690 Steam Flow / Feed Flow Mismatch Reactor Trip
- EC 86690, Reactor Trip Single Point Vulnerability Elimination

b. Findings

Introduction: A self-revealing Green NCV of 10 CFR Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified for the licensee's failure to follow EGR-NGGC-0005, Engineering Change, during a modification of the RPS. This resulted in having inadequate work instructions associated with EC 75690 and EC 86690, which resulted in a cross-tied configuration of independent trains of the RPS and the DC electrical system.

Description: During the refueling outage 28 (Fall 2013), Robinson made two engineering design changes to the RPS. EC 75690 removed the steam flow/feed flow mismatch reactor trip and EC 86690 installed an additional train for a reactor trip due to a safety injection signal eliminating a single point vulnerability in the RPS. EC 86690 involved installation of new relays in both trains of reactor protection using terminal points that were associated with cables listed to be spared during EC 75690.

On January 23, 2015, the control room received simultaneous battery charger A/A-1 and B/B-1 trouble alarms. The trouble alarms were traced to an identical ground on both trains of the DC electrical distribution system. On January 28, 2015, further troubleshooting revealed that cable C2421V, which was intended to be spared during EC 75690, was still installed between RPS racks R55 (Train A) and R60 (Train B), cross connecting both the RPS and DC electrical subsystem. The operators entered TS LCO 3.0.3 due to the inoperability of both the RPS and DC electrical subsystem after it was discovered that the plant was in an unanalyzed condition. This wiring configuration resulted in the safety injection reactor trip signal relays from both trains being electrically tied together. Instead of each train of safety injection being able to initiate a reactor trip independently, as required, the as-found configuration required a signal from both trains of safety injection to initiate a reactor trip concurrently. This also cross-connected both trains of 125V DC batteries. The licensee took immediate corrective actions to cut the cable and restore the independence of safety trains for both systems.

Licensee procedure EGR-NGGC-0005, Engineering Change, Step 9.12.5 required that engineering, "shall review and approve the planned work package, including testing and acceptance criteria, ensuring that the engineering change has been interpreted and/or incorporated correctly prior to the work start." The installation instructions for EC 75690 were performed without review and approval from engineering and failed to identify several of the cables listed to be spared, including cable "C2421V". Extent of condition walkdowns identified an additional 50 field cables that were inadvertently left in place and not spared as required by the EC 75690. Additionally, EGR-NGGC-0005 required that the installation instructions include "any items that need to be field verified to ensure the modification can be implemented as designed." The install instructions for EC 86690 included a step to verify the as found wiring for the reactor protection system, however, these instructions focused on the proper termination of wires on terminals blocks within RPS racks, and did not address field cables between the RPS racks. As a result, the pre-installation inspection failed to identify that RPS racks 55 and 60 were tied electrically.

Analysis: The failure to have adequate work instructions for engineering changes as required by procedure EGR-NGGC-0005 was a performance deficiency. This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the cross-tied configuration rendered the RPS and DC electrical subsystem inoperable because the required independence and redundancy of systems were eliminated. The finding was screened using IMC 0609 Appendix A Exhibit 2.C, Reactivity Control Systems, dated June 19, 2012, and was determined to be of very low safety significance (Green) because the finding did not affect a single RPS trip signal to initiate a reactor scram and the function of other redundant trips or diverse methods of reactor shutdown; did not involve control manipulations that unintentionally added positive reactivity; nor did it result in a mismanagement of reactivity by the operators. The performance deficiency had a cross-cutting aspect of Teamwork in the area of Human Performance because the licensee failed to coordinate their activities between work control planners and engineering to ensure nuclear safety is maintained. (H.4)

Enforcement: Appendix B to 10 CFR Part 50, Criterion V, Instructions, Procedures, and Drawings, requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings. Licensee procedure EGR-NGGC-0005, Engineering Change, Step 9.12.5 required that engineering, shall review and approve the planned work package, including testing and acceptance criteria, ensuring that the engineering change has been interpreted and/or incorporated correctly prior to the work start.

Contrary to the above, on October 28, 2013, the licensee failed to have engineering review and approve the planned work package for a modification of the RPS system. This resulted in a cross-tied configuration of independent trains of the RPS and the DC electrical subsystem which rendered both systems inoperable because the required independence and redundancy of the systems was eliminated. Immediate corrective actions were taken to cut the C2421V cable installed between RPS racks R55 (Train A) and R60 (Train B), and return the system to service. Because this violation was of very low safety significance (Green) and has been entered into the corrective action program as CR 729926, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05000261/2015002-02: Failure to Follow Engineering Change Procedure for Modification of RPS)

1R19 Post-Maintenance Testing (71111.19 – 9 samples)

a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the 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 13477493, OST-303-1, Service Water Booster Pump A test following pump rebuild and impeller replacement
- WO 1715374, OST-253, Comprehensive Flow Test for the RHR Pumps following seal replacement of the A RHR pump seal
- WO 2063989, OP-101, Reactor Coolant System and Reactor Coolant Pump Startup and Operation following installation of RCP safe shutdown seals]
- WO 13529891, Perform Tan Delta Testing following cable replacement for Station Service Transformer 2G
- WO 13325255, OST-163 Safety Injection Test and Emergency Diesel Generator Auto Start on Loss of Power and Safety Injection following replacement of a relay for the B service water booster pump
- WO 13522379, OST-410 Emergency Diesel Generator 'A' (Twenty-four Hour Load Test) following replacement of overcurrent relay for output breaker
- WO 13529892, Perform Station Service Transformer Inspection and Cleaning on SST-2G
- WO 13376825, MST-920-B, Station Battery B Performance Capacity Test following battery replacement
- WO 13370042, OST-253, Comprehensive flow test for the residual heat removal pumps following pump seal replacement

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.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

a. Inspection Scope

For the Unit 2 refueling outage from May 12, 2015, through June 25, 2015, the inspectors evaluated the following outage activities:

- outage planning
- shutdown, cooldown, refueling, heatup, and startup
- reactor coolant system instrumentation and electrical power configuration

- reactivity and inventory control
- decay heat removal and spent fuel pool cooling system operation
- containment closure

The inspectors verified that the licensee:

- considered risk in developing the outage schedule
- controlled plant configuration in accordance with administrative risk reduction methodologies
- developed work schedules to manage fatigue
- developed mitigation strategies for loss of key safety functions
- adhered to operating license and technical specification requirements

Inspectors verified that safety-related and risk-significant structures, systems, and components not accessible during power operations were maintained in an operable condition. The inspectors also reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with outage activities. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 samples)

a. Inspection Scope

The inspectors reviewed the 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

- EST-028, Main Steam Safety Valve Testing, Rev. 37
- OST-407, Verification of Component Response to Blackout Sequence, Rev.15
- OST-253, Comprehensive Flow Test for the RHR Pumps, Rev. 56
- EST-047, Reactor Coolant Flow Test, Rev. 24

Containment Isolation Valve

- OST-933, Containment Isolation Valves Leakage Test, Rev.39
- EST-140, Leak Test for ECCS Boundary Valves, Rev. 20

In-Service Tests (IST)

- OST-411, Emergency Diesel Generator “A” (Twenty-four hour load test), Rev.58

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on April 1, 2015. The inspectors observed licensee activities in the simulator 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 reviewed 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

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

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 airborne radioactivity areas established within the Radiologically Controlled Area (RCA) of the auxiliary building, reactor containment building, and radioactive waste processing and storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas. This included walkdowns and surveys of the independent spent fuel storage installation (ISFSI) pad. The inspectors reviewed survey records for several plant areas including surveys for airborne radioactivity, gamma surveys with a range of dose rate gradients, neutron surveys around the ISFSI, and pre-job surveys for upcoming tasks. The inspectors also discussed changes to plant operations that could contribute to changing radiological

conditions since the last inspection. For selected outage jobs, the inspectors attended pre-job briefings and reviewed Radiation Work Permit (RWP) 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 Locked High Radiation Area (LHRA) locations and discussed changes to procedural guidance for LHRA and Very High Radiation Area controls with health physics (HP) supervisors. The inspectors reviewed implementation of controls for the storage of irradiated material within the spent fuel pool. Established radiological controls (including airborne controls) were evaluated for selected Refueling Outage 29 (RO29) tasks including reactor coolant system filter replacement and crud burst activities. In addition, the inspectors reviewed licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations.

Occupational workers' adherence to selected RWPs and HP technician proficiency in providing job coverage were evaluated through direct observations and interviews with licensee staff. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for selected RO29 job tasks including Reactor Coolant Pump (RCP) motor activities. The inspectors also reviewed the use of personnel dosimetry (ED alarms, extremity dosimetry, multibadging in high dose rate gradients, etc.) and evaluated worker responses to dose and dose rate alarms during selected work activities.

Control of Radioactive Material

The inspectors observed surveys of material and personnel being released from the RCA using small article monitor (SAM), personnel contamination monitor (PCM), and portal monitor (PM) instruments. The inspectors discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. 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

The inspectors reviewed and assessed NCRs associated with radiological hazard assessment and control. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

Radiation protection activities were evaluated against the requirements of the UFSAR Section 12; 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.

2RS2 Occupational As Low As Reasonably Achievable (ALARA) Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

Work Planning and Exposure Tracking

The inspectors reviewed work activities and their collective exposure estimates for the RO-29 outage. The inspectors reviewed ALARA planning packages for activities related to the following high collective exposure tasks: RCP maintenance, reactor head and refueling activities, and scaffolding. For the selected tasks, the inspectors reviewed established dose goals and discussed assumptions regarding the bases for the current estimates with responsible ALARA planners. The inspectors evaluated the incorporation of exposure reduction initiatives and operating experience, including historical post-job reviews, into RWP requirements. Day-to-day collective dose data for the selected tasks were compared with established dose estimates and evaluated against procedural criteria (work-in-progress review limits) for additional ALARA review. Where applicable, the inspectors discussed changes to established estimates with ALARA planners and evaluated them against work scope changes or unanticipated elevated dose rates.

Source Term Reduction and Control

The inspectors reviewed the collective exposure three-year rolling average from 2011-2013. The inspectors evaluated historical dose rate trends for reactor coolant system piping and compared them to current RO29 data. Source term reduction initiatives, including cobalt reduction and zinc injection, were reviewed and discussed with Chemistry and HP staff. The inspectors also reviewed temporary shielding packages for the RO29 outage.

Radiation Worker Performance

As part of IP 71124.01, the inspectors observed pre-job ALARA briefings and radiation worker performance for various HRA jobs in the auxiliary building and containment. While observing job tasks, the inspectors evaluated the use of remote technologies to reduce dose including teledosimetry and remote visual monitoring.

Problem Identification and Resolution

The inspectors reviewed and discussed selected CAP documents associated with ALARA program implementation. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results. ALARA program activities were evaluated against the requirements of UFSAR Section 12, TS Section 5.4, 10 CFR Part 20, and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03 – 1 sample)

a. Inspection Scope

Engineering Controls

The inspectors reviewed the use of temporary and permanent engineering controls to mitigate airborne radioactivity during the RO-29 refueling outage. The inspectors observed the use of portable air filtration units for work in contaminated areas of the containment building and reviewed filtration unit testing certificates. The inspectors evaluated the effectiveness of continuous air monitors and air samplers placed in work area “breathing zones” to provide indication of increasing airborne levels.

Respiratory Protection Equipment

The inspectors reviewed the use of respiratory protection devices to limit the intake of radioactive material. This included review of devices used for routine tasks and devices stored for use in emergency situations. As part of IP 71124.02, the inspectors reviewed ALARA evaluations for the use of respiratory protection devices for work in the Rx Cavity. Selected Self-Contained Breathing Apparatus (SCBA) units and negative pressure respirators (NPRs) staged for routine and emergency use in the Main Control Room and other locations were inspected for material condition, SCBA bottle air pressure, number of units, and number of spare masks and air bottles available. The inspectors reviewed maintenance records for selected SCBA units for the past two years and evaluated SCBA and NPR compliance with National Institute for Occupational Safety and Health certification requirements. The inspectors also reviewed records of air quality testing for supplied-air devices and SCBA bottles.

The inspectors discussed training for various types of respiratory protection devices with HP staff and interviewed radworkers and control room operators on use of the devices including SCBA bottle change-out and use of corrective lens inserts. Respirator qualification records (including medical qualifications) were reviewed for several Main Control Room operators and emergency responder personnel in the Maintenance and HP departments.

Problem Identification and Resolution

NCRs associated with airborne radioactivity mitigation and respiratory protection were reviewed and assessed. The inspectors evaluated the licensee’s ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

Licensee activities associated with the use of engineering controls and respiratory protection equipment were reviewed against TS Section 5.4; 10 CFR Part 20; Regulatory

Guide 8.15, "Acceptable Programs for Respiratory Protection"; and applicable licensee procedures. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04 – 1 sample)

a. Inspection Scope

External Dosimetry

The inspectors reviewed National Voluntary Accreditation Program (NVLAP) certification data for the licensee's Thermoluminescent Dosimeter (TLD) processor for the current year for Ionizing Radiation Dosimetry. The inspectors observed and evaluated onsite storage of TLDs. Comparisons between ED and TLD results, including correction factors, were reviewed and discussed. The inspectors also evaluated licensee procedures for unusual dosimetry occurrences and reviewed ED alarm investigation documents.

Internal Dosimetry

The inspectors reviewed and discussed the *in vivo* bioassay program with the licensee. Inspectors reviewed procedures that addressed methods for determining internal or external contamination, releasing contaminated individuals, and the assignment of dose. The inspectors evaluated the licensee's program for *in vitro* monitoring and reviewed recent bioassay results for diving activities. However, there were no internal dose assessments for internal exposure greater than 10 millirem committed effective dose equivalent to review.

Special Dosimetric Situations

The inspectors reviewed records for declared pregnant workers (DPWs) from January 2014 through May 2015 and discussed guidance for monitoring and instructing DPWs. Inspectors reviewed the licensee's program for monitoring external dose in areas of expected dose rate gradients, including the use of multi-badging and extremity dosimetry. The inspectors evaluated the licensee's neutron dosimetry program including instrumentation used to perform neutron surveys. In addition, the inspectors reviewed the licensee's program for evaluation of shallow dose equivalent (SDE), however there were no contamination events in the inspection period that required an SDE calculation.

Problem Identification and Resolution

The inspectors reviewed and discussed selected CAP documents associated with occupational dose assessment. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

The licensee's occupational dose assessment activities were evaluated against the requirements of UFSAR Section 12; TS Section 5.4; 10 CFR Parts 19 and 20; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05 – 1 sample)

a. Inspection Scope

Radiation Monitoring Instrumentation

During tours of the reactor auxiliary building, spent fuel pool areas, and RCA exit point, the inspectors observed installed radiation detection equipment including the following instrument types: area radiation monitors (ARM), continuous air monitors, PCMs, SAMs, PMs, and liquid and gaseous effluent monitors. Setpoint methodologies for R-14 (plant vent monitor), R-18 (liquid radwaste monitor), and R-32A&B (containment high-range area monitors) were evaluated for correct alarm setpoint determination based on Offsite Dose Calculation Manual (ODCM) requirements. The inspectors observed the physical location of the components, noted the material condition, and compared sensitivity ranges with UFSAR details.

In addition to equipment walk-downs, the inspectors observed functional checks and alarm set-point testing of various fixed and portable detection instruments, including SAMs, teletectors, PCMs, and PMs. Source certificates were reviewed to evaluate consistency between radionuclides used for instrument testing and actual plant source term. Inspectors also reviewed daily performance tests of laboratory instrumentation such as high purity germanium (HPGe) detectors, scintillation counters and gross alpha and beta counters. The inspectors reviewed calibration records for selected PCMs, PMs, and SAMs located at the RCA exit. The inspectors also reviewed daily performance check and calibration records for count room instrumentation, including the HPGe detectors, liquid scintillation counters, and alpha/beta counters. Calibration source documentation was reviewed for the high-range Shepherd calibrator. Calibration records were also reviewed for ARM channels R-32A and R-32B, and R-14. Calibration stickers on portable survey instruments were noted during inspection of storage areas for "ready-to-use" equipment. The inspectors also reviewed and discussed an engineering change to replace several ARMs within the plant.

Problem Identification and Resolution

Selected licensee NCR documents associated with instrumentation were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, "Clarification of Three Mile Island Action Plan Requirements"; TS Sections 3 and 5; UFSAR Chapters 11 and 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – 5 samples)

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between April 1, 2014, and March 31, 2015, 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

- unplanned power changes per 7000 critical hours

Cornerstone: Mitigating Systems

- emergency AC power system
- safety system functional failures

Occupational Radiation Safety Cornerstone

The inspectors reviewed recent Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone and reviewed PI records generated between July 20, 2014, and March 20, 2015. 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 and reviewed PI records generated between July 20, 2014, and March 20, 2015. For the assessment period, the inspectors reviewed cumulative and projected doses to the public contained in liquid and gaseous release permits and NCRs related to Radiological Effluent Technical Specifications/ODCM issues. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 2 samples)

.1 Routine Review

The inspectors screened items entered into the licensee's CAP 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 Annual Followup of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of the licensee response to operating experience involving limitourque actuators installed in an unqualified orientation.

In addition, the inspectors conducted a detailed review of CR 737818, Equipment OOT issues impose potential impact to R229.

The inspectors evaluated the following attributes of the licensee's actions:

- complete and accurate identification of the problem in a timely manner
- evaluation and disposition of operability and reportability issues
- consideration of extent of condition, generic implications, common cause, and previous occurrences
- classification and prioritization of the problem
- identification of any additional condition reports
- completion of corrective actions in a timely manner

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed issues entered in the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues and human performance trends but also considered the results of inspector daily condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the 6-month period of January 2015 through June 2015 although some examples extended beyond those dates when the scope of the trend warranted. The inspectors compared their results with the licensee's analysis of trends. Additionally, the inspectors reviewed the adequacy of corrective actions associated with a sample of the issues identified in the licensee's trend reports. The inspectors also reviewed corrective action documents that were processed by the licensee to identify potential adverse trends in the condition of structures, systems, and/or components as evidenced by acceptance of long-standing non-conforming or degraded conditions. Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion

.1 (Closed) LER 05000261/2015-01: Reactor Protection and DC Electrical System Inoperability Parallel Connection of Safety Trains

On January 28, 2015, with the plant at 100 percent power, TS 3.0.3 was entered due to the inoperability of both trains of the RPS and both trains of the DC electrical distribution system. The licensee discovered that a modification performed during the fall 2013 refueling outage inadvertently connected in parallel, both safety trains of the RPS and both trains of the DC electrical distribution system. Instead of each train of safety injection being able to initiate a reactor trip independently, as required, the as-found configuration required a signal from both trains of safety injection to initiate a reactor trip concurrently. The licensee took immediate corrective actions to cut the cable and restore the independence of safety trains for both systems. The inspectors reviewed the corrective actions and determined that they were adequate. The enforcement aspects of this LER are documented in Section 1R18 Plant Modifications. This LER is closed.

.2 (Closed) LER 05000261/2015-03: Failed Surveillance on Battery Charger A-1

On January 19, 2015, the measurement and test equipment used to perform a surveillance test on June 18, 2014, of the station battery charger A-1 was found to be OOT resulting in a failed surveillance test. The battery charger was placed in service on two separate occasions after the failed surveillance test that exceeded TS 3.8.4 Condition A and Condition B required action times. It was in service for 16 hours on November 4, 2014, and from December 2, 2014, to January 19, 2015. This failure to

comply with TS 3.8.4 Conditions A and B constitutes a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy because when the surveillance test for Battery Charger A-1 was re-performed with alternate test equipment, the charger was confirmed to be capable of providing the capacity to charge Station Battery A while in service. The enforcement aspects of the late report related to this issue are documented in Section 1R15 Operability Determinations and Functionality Assessments. This LER is closed.

4OA5 Other Activities

.1 Operation of an Independent Spent Fuel Storage Installation (IP 60855.1)

a. Inspection Scope

The inspectors performed a walkdown and external inspection of the two ISFSIs on site (reference dockets 72-3 and 72-60). The inspectors observed the general condition of the structures and passive cooling passages.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On July 16, 2015, the resident inspectors presented the inspection results to Mr. Glover and other members of the licensee's staff. The inspectors confirmed that proprietary information was not retained by the inspectors or documented in this report.

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

C. Caudell, Regulatory Affairs
J. Conder, Assistant Operations Training Manager
T. Cosgrove, Plant General Manager
S. Connelly, Licensing
H. Curry, Training Manager
M. Dugan, ISI Coordinator
F. Giannone, Operations Training Manager
M. Glover, Site Vice President
E. Hedderman, Chemistry Manager
R. Hightower, Licensing/Reg. Programs Supervisor
D. Hoffman, Nuclear Oversight Manager
K. Holbrook, Operations Manager
M. Pastva, Jr., Nuclear Regulatory Affairs
S. Peavyhouse, Organizational Effectiveness Director
G. Pizzutti, BACCP Owner
J. Rackley, Training Supervisor
C. Sherman, Radiation Protection Superintendent
C. Spencer, Welding Engineer

NRC personnel

G. Hopper, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened & Closed

05000261/2015002-01	NCV	Failure to Timely Report Required Information as Required by 10 CFR 50.73
05000261/2015002-02	NCV	Failure to Follow Engineering Change Procedure for Modification of RPS

Closed

05000261/2015-01	LER	Reactor Protection and DC Electrical System Inoperability Parallel Connection of Safety Trains
05000261/2015-03	LER	Failed Surveillance on Battery Charger A-1

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

ADMP-OPS-TRM-00001, General Load Reduction and System Restoration Plan, Rev. 1
AOP-026, Grid Instability, Rev. 15
AOP-031, Operation with High Switchyard Voltage, Rev. 15
PLP-118, Hot Weather Operations, Rev. 12
SORMC-NUC-020, Nuclear Power Plant Post-Trip Switchyard Voltage Validation, Rev. 2
SORMC-NUC-030, Robinson Plant Voltage Support and Coordination, Rev. 17
OP-906, Heating, Ventilation, and Air Conditioning, Rev. 72

Section 1R04: Equipment Alignment

Procedures

OP-402, Auxiliary Feedwater System Checklist, Rev. 93
OP-910, Spent Fuel Pool Cooling System, Rev. 40
AOP-014, Component Cooling Water System Malfunction, Rev. 37
OP-903, Service Water System, Rev. 136
OP-201, Residual Heat Removal System, Rev. 71

Other documents

Configuration 5A1, RNP Key Safety Function Requirements, 5/19/2015

Drawings

No. 5379-1485, Spent Fuel Pit Cooling System Flow Diagram, Rev. 31
No. A-190301, RHR Pit 'A' Level Indication, Rev. 2
Action Requests

Section 1R05: Fire Protection

Procedures

OMM-003, Fire Pre-Plans, Rev. 70

Other documents

Fire Drill Critique 15-2Q-01A, 4160 Switchgear Room 3 Scenario 18, Rev. 2

Drawings

HBR2-11937, Fire Pre-plan Auxiliary building Second Level Hallway and Adjoining Rooms, Sheet 2-3, Rev. 2
HBR2-11937, Fire Pre-Plan Safety Injection Pump Room, Sheet 19, Rev. 1
HBR2-9717, Fire Zone /Area, Sheet 1-3, Rev. 4
HBR2-11937, Fire Pre-Plan Containment Vessel, 1st Floor, Sheet 33, Rev. 1
HBR2-11937, Fire Pre-Plan Containment Vessel, 2nd Floor, Sheet 34, Rev. 0
HBR2-11937, Fire Pre-Plan Containment Vessel, 3rd Floor, Sheet 35, Rev. 0
HBR2-11937, Fire Pre-Plan RHR Pump Room (RHR PIT), Sheet 43, Rev. 0
HBR2-11937, Fire Pre-Plan Turbine Building Mezzanine Level, Sheet 58, Rev. 3

Section 1R07: Heat Sink Performance

Procedures

CM-201, Safety Related and Non-safety Related Heat Exchanger Maintenance, Rev. 56

Action Requests

750679, Concrete Chips in CCW-HTX-B Observed During R229 Inspection
 750869, North Service Water Underground Header Inspection
 750855, Eddy Current Inspection for "B" CCW Heat Exchanger

Section 1R08: Inservice Inspection ActivitiesProcedures:

AD-EG-ALL-1613, Buried Piping Integrity Program Implementation, Rev. 1
 AD-EG-PWR-1611, Boric Acid Corrosion Control Program Implementation, Rev. 0
 NDEP-0201, Liquid Penetrant Examination, Rev. 34
 NDEP-0425, Ultrasonic Examination of Austenitic Pipe Welds (PDI), Rev. 13
 NDEP-0611, VT-1 Visual Examination of Nuclear Power Plant Components, Rev. 20
 PD-EG-PWR-1611, Boric Acid Corrosion Control Program, Rev. 0

Drawings:

HBR2-10618, Inservice Inspection Drawing HPSIS Aust. S.S. Welds \geq MPS 2 & \leq NPS4 CPL-239, Sheet 105, Rev. 6
 HBR2-10618, Inservice Inspection Drawing CRDM Housing Welds CPL-101C, Sheet 004, Rev. 4
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