



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

May 04, 2015

EA 15-082

Mr. David R. Vineyard  
Vice President  
Southern Nuclear Operating Company, Inc.  
Edwin I. Hatch Nuclear Plant  
11028 Hatch Parkway North  
Baxley, GA 31513

**SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000321/2015001 AND 05000366/2015001 AND EXERCISE OF  
ENFORCEMENT DISCRETION**

Dear Mr. Vineyard:

On March 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Edwin I. Hatch Nuclear Plant Units 1 and 2. On April 27 and April 30, 2015, 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.

NRC inspectors documented three findings of very low safety significance (Green) in this report. These findings involved a violation of NRC requirements. Further, inspectors documented two licensee-identified violations which were determined to be of very low safety significance in this report. 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 these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. 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 Hatch. 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 Hatch.

The enclosed inspection report also documents one noncompliance for which the NRC is exercising enforcement discretion in accordance with Section 9.1 of the NRC Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Section 11.05(b) of Inspection Manual Chapter 0305 "Operating Reactor Assessment Program." The noncompliance is associated with your implementation of the requirements and standards of 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." The non-compliance was identified by the licensee and is a violation of NRC requirements.

D. Vineyard

2

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Shane Sandal, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket Nos.: 50-321, 50-366  
License Nos.: DPR-57 and NPF-5

Enclosures: Inspection Report 05000321/2015001, 05000366/2015001  
w/Attachment: Supplemental Information

cc: Distribution via Listserv

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Letter to David R. Vineyard from Shane Sandal, dated May 04, 2015

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000321/2015001 AND 05000366/2015001 AND EXERCISE OF  
ENFORCEMENT DISCRETION

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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-321, 50-366

License Nos.: DPR-57 and NPF-5

Report Nos.: 05000321/2015001 and 05000366/2015001

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Edwin I. Hatch Nuclear Plant

Location: Baxley, Georgia 31513

Dates: January 1 – March 31, 2015

Inspectors: D. Hardage, Senior Resident Inspector  
D. Retterer, Resident Inspector  
B. Collins, Reactor Inspector (1R08)  
C. Dykes, Health Physicist (2RS3, 2RS4, 2RS5, 4OA1)  
W. Pursley Health Physicist (2RS2, 2RS4, 2RS5)  
J. Dymek, Reactor Inspector (4OA3)  
R. Kellner Health Physicist (2RS1, 2RS2, 4OA1)  
W. Monk, Reactor Inspector (4AO3)  
J. Montgomery, Reactor Inspector (4OA3, 4OA7)

Approved by: Shane Sandal, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY

IR 05000321/2015001 and 05000366/2015001; January 1, 2015, through March 31, 2015; Edwin I. Hatch, Units 1 and 2, Problem Identification and Resolution, Radiological Hazard Assessment and Exposure Control.

The report covered a 3-month period of inspection by resident inspectors and regional inspectors. There were three Green violations 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 June 2, 2011. 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 January 28, 2013 and revised 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 non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Procedures, Instructions, and Drawings," was identified for failure to identify existing embedded conduit in the vicinity of prescribed core drills location. The violation was entered into the licensee's corrective action program (CAP) as condition report (CR) 902506.

Failure to provide adequate instructions in Design Change Package (DCP) SNC467474 to perform core drills in the Unit 2 control building to support conduit installations was a performance deficiency. This performance deficiency is more than minor because it affected the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective in that 2P41F316A was rendered incapable of performing its' safety related function of closing in the event of an accident condition. The finding was screened as Green because the inoperability did not last longer than the technical specification (TS) allowed outage time. The inspectors determined the performance deficiency has a cross-cutting aspect of "work management" in the human performance area, because the licensee's work process did not identify and manage the risk commensurate to the core drill work. [H.5] (Section 4OA2.2)

### Cornerstone: Occupational Radiation Safety

- Green. An NRC-Identified non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to perform an adequate survey. Air samples obtained in the reactor cavity and on the refuel floor during a contamination event indicating greater than 0.3 beta-gamma Derived Air Concentration (DAC) fraction level were not analyzed for alpha activity as required by the licensee's procedures. Previous characterization of the area had determined the area to be an Alpha Level II area requiring additional assessment and evaluation of air samples. This violation was entered into the licensee's CAP as CR 10033022.

This finding is greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process (Monitoring and RP Controls) and adversely affected the cornerstone objective in that failure to identify potentially significant

contributors to internal dose could lead to unmonitored occupational exposures. The finding was determined to be of very low safety significance (Green) because it was not related to As Low As Reasonably Achievable (ALARA) Planning and the ability to assess dose was not compromised during these instances. The cause of this finding was directly related to the cross-cutting aspect of leaders ensuring equipment, procedures, and other resources are available and adequate in the Resources component of the Human Performance area. [H.1] (Section 2RS1)

- Green. An NRC-Identified non-cited violation (NCV) of TS 5.4.1 was identified for the failure of the licensee to perform complete quantitative analysis of air samples using approved counting equipment as required by the licensee's procedures. NMP-HP-301, Step 5.6, provides guidance for quantitative evaluation of air samples. On February 16, and 25, 2015, air samples for work activities in the Reactor Pressure Vessel head (RPV) and the Reactor Water Cleanup (RWCU) System heat exchanger were not quantitatively analyzed or evaluated for alpha activity even though the areas had been identified as having elevated alpha contamination levels. The licensee entered the issue into their corrective action program (CAP) as CR 10034556.

The finding was more than minor because it was associated with the Occupational Radiation Safety Program attribute of exposure control and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from airborne radioactive material during routine civilian nuclear reactor operation. Failure to identify potentially significant contributors to internal dose could lead to unmonitored occupational exposures. The finding was determined to be of very low safety significance (Green) because it did not involve: (1) an as low as is reasonably achievable finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose related to As Low As Reasonably Achievable (ALARA) Planning and the ability to assess dose was not compromised during this instance. The cause of this finding was directly related to the cross-cutting aspect of following processes, procedures, and work instructions in the Procedure Adherence component of the Human Performance area. [H.8] (Section 2RS1)

Violations of very low safety significance that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period at or near 100 percent rated thermal power (RTP). On January 19, 2015, the unit was shutdown to replace the "F" safety relief valve (SRV). The unit was returned to 100 percent RTP on January 22, 2015. On March 31, 2015, operators reduced power to 15 percent RTP to facilitate the repair of valve packing steam leakage from a second stage moisture separator/reheater (MS/R) line. The unit operated at or near 15 percent RTP for the remainder of the inspection period.

Unit 2 began the inspection period at 98 percent RTP in the end of cycle coastdown period. On February 9, 2015, the unit was shut down for a scheduled refueling outage. The unit was returned to 100 percent RTP on March 17, 2015. The unit operated at or near 100 percent 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)

##### a. Inspection Scope

Impending Adverse Weather Conditions: The inspectors reviewed the licensee's preparations to protect risk-significant systems from cold weather expected during January 5<sup>th</sup> through January 9<sup>th</sup>. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of and during the adverse weather conditions. The inspectors reviewed the licensee's plans to address the ramifications of potentially lasting effects that may result from freezing weather. The inspectors verified that operator actions specified in the licensee's adverse weather procedure maintain readiness of essential systems. The inspectors verified that required surveillances were current, or were scheduled and completed, if practical, before the onset of anticipated adverse weather conditions. The inspectors also verified that the licensee implemented periodic equipment walkdowns or other measures to ensure that the condition of plant equipment met operability requirements. Documents reviewed are listed in the Attachment.

##### b. Findings

No findings were identified.



1R04 Equipment Alignment (71111.04)a. Inspection Scope

Partial Walkdown: The inspectors verified that critical portions of the following three systems or trains 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.

- Unit 2 “C” emergency diesel generator while Unit 2 “A” emergency diesel generator was out of service for maintenance, February 2
- Unit 1 ‘B’ train of RHR service water system while ‘A’ RHR service water pump was out of service, March 1
- Unit 2 RHR system following realignment from shutdown cooling after the unit 2 refueling outage, March 18

Complete Walkdown: The inspectors verified the alignment of the Unit 1 Standby Liquid Control 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.

b. Findings

No findings were identified.

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

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.

- Unit 1 and Unit 2, AC Inverter rooms, fire zones 1008/2008
- Unit 1 and Unit 2, RPS battery rooms, fire zones 1009/1010/2009/2010
- Unit 1 and Unit 2, 600V switchgear rooms, fire zones 1016/1017/2016/2017
- Unit 2, main steam chase, fire zone 2205H
- Unit 2, torus area, fire zones 2203A/2205A

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

Internal Flooding: The inspectors reviewed related flood analysis documents and walked down the area(s) 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.

- Unit 2, Northeast reactor building diagonal
- Unit 2, Southeast reactor building diagonal

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

Annual Review: The inspectors verified the readiness and availability of the Unit 2 "A" residual heat removal heat exchanger to perform its design function by verifying the

licensee uses the periodic maintenance method outlined in GL 89-13. 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 (Inspection Procedure 71111.08G, Unit 2)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities: From February 16 – 20, 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, emergency feedwater systems, risk-significant piping and components, and containment systems in Unit 2. The inspectors' activities included a review of non-destructive examinations (NDEs) to evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI (Code of Record: 2001 Edition with 2003 Addenda, 4<sup>th</sup> Interval, 3<sup>rd</sup> Period, 2<sup>nd</sup> Outage), and to verify that indications and defects (if present) were appropriately evaluated and dispositioned, in accordance with the requirements of the ASME Code, Section XI, acceptance standards.

The inspectors directly observed the following NDEs mandated by the ASME Code, to evaluate compliance with the ASME Code Section XI and Section V requirements, and if any indications and defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement.

- Ultrasonic Test (UT) of 16" Main Steam elbow-to-pipe weld (2N11-2MSA-16A-17), ASME Class 2
- Liquid Penetrant Test (PT) of four 3" Main Steam pipe-to-pipe/pipe-to-elbow/pipe-to-tee welds (B21-1MS-3-8,-10,-13,-20), ASME Class 1
- Magnetic Particle Test (MT) of eight support lugs on 24" Main Steam pipe (2N11-2MSA-24A-11PL-(1 through 8)-2N11-MS-A60), ASME Class 2

The inspectors observed the welding activities referenced below, and reviewed associated documents in order to evaluate compliance with procedures and the ASME Code. 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.

- HNP-ISI-ALT-08, Application of Full Structural Weld Overlay on Feedwater Nozzle N4A, ASME Class 1

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 attribute.

Problem Identification and Resolution: The inspectors reviewed a sample of ISI-related problems which were identified by the licensee, and entered into the corrective action program (CAP) as condition reports (CRs). The inspectors reviewed the CRs to confirm that the licensee had appropriately described the scope of the problem, and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the report Attachment.

b. Findings

No findings were identified.

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

a. Inspection Scope

Resident Inspector Quarterly Review - Licensed Operator Requalification: The inspectors observed a simulator scenario conducted for training of an operating crew for a normal reactor shutdown per 34GO-OPS-013-2, including shutdown of major plant components such as the reactor feed pumps, recirculation pumps and the main turbine. 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

Resident Inspector Quarterly Review - Licensed Operator Performance: The inspectors observed licensed operator performance in the main control room during Unit 2 shutdown on February 9. 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. Documents reviewed are listed in the Attachment.

- Unit 1, 1T48F323F vacuum breaker failed IST
- Unit 2, 2T46D001A, 2A SGBT failure to start

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the five 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.

- Unit 1, January 20-25, emergent maintenance on "A" plant service water pump due to high vibrations
- Unit 1 and Unit 2, week of January 24 – January 30, including scheduled overhaul of "2A" emergency diesel generator
- Unit 1 and Unit 2, week of February 7- February 13, including protected equipment status reviews for Unit 2 outage and Unit 1 routine maintenance
- Unit 1 and Unit 2, week of February 21 – February 27, including protected equipment status reviews for Unit 2 outage and Unit 1 routine maintenance and emergent

maintenance on “1B” emergency diesel generator due to failure of the standby lube oil pump

- Unit 1 and Unit 2, week of March 21 – March 27, including Unit 1 and Unit 2 routine maintenance

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors selected the five 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.

- Unit 2, 2R24-S018B LPCI 600V MCC Water Protection, CR 10007321
- Unit 1, control rod selection matrix degradation, CR 10010528
- Unit 1, “A” plant service water pump lower seismic support misaligned, CR 10016864
- Unit 2, Division 2 PSW to 2C EDG has 60 gpm thru wall leak, CR 10024873
- Target Rock 3-stage SRV model 0867 10CFR21 interim notification, CR 10042321

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.

- SNC610453, Increase low flow trip time delay for 1Z41B003C, Main Control Room Air Handler.

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.

- SNC610454, Change "C" main control room air conditioner TDR setpoint, Jan 12
- SNC113098, Replace 2A EDG cylinder liner Orings, February 5
- SNC635384, 2A SBGT filter train – Adjust fan discharge volume damper, Feb 8
- SNC584357, Replace 2C EDG LOCA/LOSP timer card, March 5
- SNC430192, MSIV 2B21F022B install weir valve internal modification kit, March 6
- SNC413701, HPCI Mechanical Seal Replacement, March 15

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)

a. Inspection Scope

For the Unit 2 refueling outage from February 9, 2015 through March 14, 2015 and the Unit 1 maintenance outage to replace the unit 1 "F" SRV from January 19, 2015 through January 20, 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)

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

- 34SV-R43-005-2, "Diesel Generator 1B Semi-Annual Test"
- 34SV-T22-001-0, "Secondary Containment Test"

Containment Isolation Valve

- 42SV-TET-001-2, "Primary Containment Periodic Type B and Type C Leakage Test for 2B31-F019," February 13
- 42SV-TET-001-2, "Primary Containment Periodic Type B and Type C Leakage Test for 2P70-F067," March 3

In-Service Test (IST)

- 34SV-E41-001-2, "HPCI Valve Operability"

Reactor Coolant System Leak Detection

- 34SO-G11-013-1, "Drywell and Reactor Building Sumps System"

b. Findings

No findings were identified.

## 2. RADIATION SAFETY (RS)

2RS1 Radiological Hazard Assessment and Exposure Controlsa. Inspection Scope

Hazard Assessment and Instructions to Workers: During facility tours, the inspectors directly observed labeled radioactive material and postings for radiation areas and High Radiation Areas (HRAs) established within the Radiologically Controlled Area (RCA) of Unit 1 (U1) and Unit 2 (U2) Reactor and Turbine Buildings, radioactive waste processing areas, and the Waste Separation and Temporary Storage Facility. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas, including the Independent Spent Fuel Storage Installation (ISFSI). The inspectors reviewed and verified survey records for several plant areas including surveys for alpha emitters, airborne radioactivity, and gamma surveys with a range of dose rate gradients. The inspectors reviewed several radiation work permit (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers. The inspectors reviewed selected Electronic Dosimeter (ED) dose and dose rate alarms, to verify workers properly responded to the alarms and that the licensee's review of the events was appropriate. The inspectors observed jobs in radiologically risk-significant areas including HRAs and areas with, or with the potential for airborne activity.

Contamination and Radioactive Material Control: The inspectors observed the release of potentially contaminated items from the RCA and from contaminated areas (i.e., U2 Drywell). The inspectors also reviewed the procedural requirements for, and equipment

used to perform, the radiation surveys for release. During plant walk downs, the inspectors evaluated radioactive material storage areas and containers, including satellite RCAs and yard areas, assessing material condition, posting/labeling, and control of materials/areas. In addition, the inspectors reviewed the sealed source inventory and verified labeling, storage conditions, and leak testing of selected sources.

Radiological Hazards Control and Work Coverage: The inspectors evaluated licensee performance in controlling worker access to radiologically significant areas and monitoring jobs in-progress during the week of the onsite inspection. The inspectors also reviewed the procedural guidance for multi and extremity badging. For HRA tasks involving significant dose rate gradients, the inspectors evaluated the use and placement of whole body and extremity dosimetry to monitor worker exposure. The inspectors reviewed RWPs for use in airborne areas, ensuring the prescribed controls were appropriate for the conditions as identified in radiological surveys and air samples. ED alarm set points and worker stay times were evaluated against area radiation survey results for containment and auxiliary building activities.

Risk Significant High Radiation Areas and Very High Radiation Area Controls: The inspectors evaluated access barrier effectiveness for selected Locked High Radiation Area (LHRA) and Very High Radiation Area (VHRA) locations. Changes to procedural guidance for LHRA and VHRA controls were discussed with Radiation Protection (RP) supervisors. During plant walk downs of the Reactor and Turbine Buildings, the inspectors verified the posting/locking of LHRA/VHRA areas. Established radiological controls (including airborne controls) were evaluated for selected tasks including work in auxiliary building HRAs, and radwaste processing and storage. 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.

Radiation Worker Performance and RP Technician Proficiency: The inspectors observed radiation worker performance through direct observation. Jobs observed included maintenance and refueling activities in the drywell, reactor building, and refueling floor in high radiation and contaminated areas. The inspectors also observed health physics technicians (HPTs) providing pre-job/RWP briefings, releasing material from the RCA, and providing field coverage of jobs. Occupational workers' adherence to selected RWPs and HPT proficiency in providing job coverage were evaluated through direct observations and interviews with licensee staff. ED alarm set points and worker stay times were evaluated against area radiation survey results for reviewed RWPs.

Problem Identification and Resolution: CRs associated with radiological hazard assessment and control were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NMP-GM-002, Corrective Action Program, Version 13.1 and NMP-GM-002-001, Corrective Action Program Instructions, Version 33.1. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

RP activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12; Technical Specifications (TS) Sections 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

.1 Failure to perform adequate surveys of air samples for alpha activity

Introduction: An NRC-Identified, Green non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to perform an adequate survey. Air samples indicating greater than 0.3 beta-gamma Derived Air Concentration (DAC) fraction level were not analyzed for alpha activity as required by the licensee's procedures.

Description: On February 10, 2015, with plant personnel working in the Unit 2 refueling cavity performing disassembly of the Unit 2 reactor pressure vessel (RPV), Operations raised RPV water level to mitigate temperature changes without notifying the Radiation Protection staff. The increase in the water level caused a release of contaminated steam from the RPV head contaminating the refueling floor and much of the reactor building. The release of contaminated steam caused continuous air monitors (CAM) on the refueling floor (228' elevation) to alarm and created an airborne radioactivity area resulting in evacuation of personnel from the area. Plant Hatch had previously characterized the Reactor Vessel Head Internal Components as Level II Alpha Areas in the Hatch Plant Characterization Study, dated July 2012. NMP-HP-301 defined an alpha level II area as an area that alpha contamination levels are greater than or equal to 20 disintegrations per minute by 100 cm squared (dpm/100cm<sup>2</sup>) that have an Activity Ratio of beta/gamma to alpha less than 30,000 and greater than 300 or the DAC fraction ratio is between 0.1 and 10. The alpha hazard is considered "Significant" and likely to contribute more than ten percent of the total internal dose. Recent surveys (ID 108858 & 119526) had characterized the Units 1 & 2 refueling floors as Alpha level II areas.

Procedure, NMP-HP-301 Airborne Radioactivity Sampling and Evaluation, required a gamma spectroscopy analysis of the air samples collected during the contamination event. The results of the gamma spectroscopy indicated the beta/gamma DAC fraction levels of 3.23 and 0.34 on two air samples (#63161 and #63163). Guidance in attachment 6 of NMP-HP-301 for Alpha level II areas required air samples having beta/gamma results greater than 0.3 DAC to be analyzed further for alpha. Contrary to that guidance, further alpha analysis was not performed for air samples # 63161 and #63163, which had beta/gamma DAC fraction levels of 3.23 and 0.34 respectively, both above the procedural action level of 0.3 DAC.

Analysis: The inspectors determined that the failure to perform alpha activity analysis of air samples as required by Attachment 6 of NMP-HP-301 was a performance deficiency. This finding was greater than minor because it was associated with the Occupational Radiation Safety cornerstone attribute of Exposure Control and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from airborne radioactive material during routine civilian nuclear reactor operation. Failure to identify potentially significant contributors to internal dose

could lead to unmonitored occupational exposures. The finding was evaluated using the Occupational Radiation Safety Significance Determination Process (SDP) and was determined to be of very low safety significance (Green) because it was not related to As Low As Reasonably Achievable (ALARA) Planning and the ability to assess dose was not compromised during these instances. In addition, it did not involve overexposure or substantial potential for overexposure because of the relatively low alpha source term in the areas where the surveys were performed. This conclusion was drawn from the results of beta/gamma and alpha smear surveys performed at those selected work locations. However, if left uncorrected, unmonitored internal exposure could have occurred in areas of the plant where alpha emitters would be present. The cause of this finding was directly related to the cross-cutting aspect of leaders ensuring equipment, procedures, and other resources are available and adequate in the Resources component of the Human Performance area. [H.1]

Enforcement: 10 CFR 20.1501(a) requires that each licensee make, or cause to be made, surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20, and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, a “survey” means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. 10 CFR 20.1201(a) stated, in part, that the licensee shall control the occupational dose to individual adults. Contrary to the above, on February 10, 2015, the licensee failed to control the occupational dose to individual adults in that the licensee did not evaluate the alpha airborne radioactivity as directed by Attachment 6 of procedure NMP-HP-301. Because this violation was of very low significance and was entered into the licensee’s CAP as CR 10033022, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000321, 366/20150001-01, Failure to perform adequate surveys of air samples for alpha activity.)

.2 Failure to follow procedure to perform complete analysis of air samples

Introduction: An NRC-Identified non-cited violation (NCV) of TS 5.4.1 was identified for the failure of the licensee to perform complete analysis of air samples using approved counting equipment as required by the licensee’s procedures.

Description: During a review of radiological survey and air sample results, the inspectors identified that the licensee routinely performed qualitative field screening of air samples using portable survey instruments rather than performing a quantitative analysis using laboratory instrumentation as required by procedure NMP-HP-301, Airborne Radioactivity Sampling and Evaluation. Step 5.5 in procedure NMP-HP-301 states that field screening is for determining whether further analysis is required on particulate air samples collected in non-alpha areas only (beta-gamma has been determined to be the only contamination present.) and depending upon the results can terminate the analysis of an air sample without further evaluation. Step 5.6, Particulate/Iodine Evaluation for Beta-Gamma Emitters, required air filters be analyzed using scaler counting instrumentation and electronic/paper data calculation or gamma spectroscopy system both yielding a quantitative beta/gamma analysis. Step 5.7 Alpha

evaluation also requires the use of instrumentation yielding a quantitative alpha analysis of the air sample. Air samples obtained during work activities on the Reactor Pressure Vessel (RPV) head and the Reactor Water Cleanup (RWCU) System heat exchanger on February 16, and 25, 2015, (surveys 120913 & 121754), were not given quantitative analysis or evaluated for potential alpha activity. Both of the areas had been previously characterized (Plant Hatch Characterization Study 2012), or recently verified (Survey 121754), as being alpha working areas which required the quantitative analysis of the air samples as directed by section 5.6, not the field screening method, section 5.5, that was performed. The analysis of the air samples ended with the method used in 5.5 and was not completely analyzed to determine the potential radiological hazards in the area.

Analysis: The inspectors determined that the routine failure of performing complete analysis and evaluation of air samples obtained during work activities in areas likely to contain elevated alpha contamination, was a performance deficiency. This finding is greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process (Monitoring and RP Controls) and adversely affects the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from airborne radioactive material during routine civilian nuclear reactor operation. Failure to identify potentially significant contributors to internal dose could lead to unmonitored occupational exposures. The finding was evaluated using the Occupational Radiation Safety Significance Determination Process (SDP) and was determined to be of very low safety significance (Green) because it was not related to As Low As Reasonably Achievable (ALARA) Planning and the ability to assess dose was not compromised during these instances. In addition, it did not involve overexposure or substantial potential for overexposure because of the relatively low alpha source term in the areas where the surveys were performed. This conclusion was drawn from the results of beta/gamma and alpha smear surveys performed at those selected work locations and workers successfully passed through the portal monitors at the exit of the controlled access area without alarm, confirming that no worker experienced an uptake of radioactive material. However, if left uncorrected, unmonitored internal exposure could have occurred in areas of the plant where alpha emitters would be present. The cause of this finding was directly related to the cross-cutting aspect of following processes, procedures, and work instructions in the Procedure Adherence component of the Human Performance area. [H.8].

Enforcement: TS 5.4.1, Administrative Control (Procedures), requires that written procedures shall be established, implemented, and maintained, covering applicable procedures recommended in RG 1.33, App. A, Nov. 1972 (Safety Guide 33, Nov. 1972). Section G.5.c of RG 1.33, App. A, Nov. 1972 (Safety Guide 33, Nov. 1972) states that the licensee have procedures for control of radioactivity for personnel monitoring and special work permit for surveys and monitoring. NMP-HP-301, Airborne Radioactivity Sampling and Evaluation, Step 5.5 states that Field Screening is for determining whether further analysis is required on particulate air samples collected in non-alpha areas only. For alpha areas Step 5.6, Particulate/Iodine Evaluation for Beta-Gamma Emitters, required air filters be analyzed using scaler counting instrumentation and electronic/paper data calculation or gamma spectroscopy system both yielding a quantitative beta/gamma analysis. Contrary to the above, on February 16, and 25,

2015, the licensee failed to implement procedure NMP-HP-301, Step 5.6, by not performing a quantitative analysis, of the air samples obtained from work areas characterized as alpha working areas. Specifically, air samples taken during work activities on the RPV head and the RWCU heat exchanger, areas characterized as alpha working areas, were analyzed using only the qualitative field screening step 5.5 failing to quantitatively evaluate the air samples using step 5.6 to determine the potential radiological hazard. Because this violation was of very low significance and was entered into the licensee's CAP (CR 10034556), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000321, 366/20150001-02, Failure to perform complete analysis of air samples.)

## 2RS2 As Low As Reasonably Achievable (ALARA)

### a. Inspection Scope

Work Planning and Exposure Tracking: The inspectors reviewed work activities and their collective exposure estimates associated with the previous Unit 1 (U1) refueling outage (1R26), and the current Unit 2 (U2) refueling outage (2R23). ALARA Plans were reviewed for various high collective exposure tasks including: refueling operations, valve maintenance, in service inspection, scaffolds, insulation, and shielding installation. For the selected tasks, the inspectors reviewed the assumptions and basis for the dose rate and man-hour estimates. The inspectors discussed with ALARA staff the means by which wrench-hours were derived from the work order hours provided by craft supervision to ALARA staff. The inspectors verified the licensee had established several means to track and trend doses for ongoing work activities. The inspectors evaluated the incorporation of exposure reduction initiatives and operating experience, including historical post-job reviews, into RWP requirements. Collective dose data for selected tasks were compared with established dose estimates and evaluated against procedural criteria (trigger points) for additional ALARA review. Where applicable, changes to established estimates were discussed with ALARA planners and evaluated against work scope changes or unanticipated elevated dose rate. The inspectors discussed the operation of the Station ALARA Committee with licensee staff. For ALARA Plans from 1R26, the inspectors compared the results achieved in terms of actual dose versus (vs.) planned dose and actual hours vs. estimated hours, reviewed in-progress and post-job ALARA reviews, and discussed the job planning, performance, and reviews with ALARA staff. For ALARA Plans associated with 2R23, the inspectors reviewed dose-to-date on select jobs, comparing estimates with actuals, and observed development of selected in-progress reviews.

Source Term Reduction and Control: The inspectors reviewed the collective exposure three-year rolling average (TYRA) from 2011 - 2013 and reviewed historical outage collective exposure trends. The inspectors evaluated historical dose rate trends and compared them to current 2R23 data. Through interviews with licensee staff and document review, the inspectors assessed the licensee's current activities related to source term reduction.

Radiation Worker Performance: Radiation worker performance was also observed and evaluated as part of Inspection Procedure 71124.01 and is documented in section 2RS1.

While observing job tasks, the inspectors evaluated the use of remote technologies to reduce dose including teledosimetry and remote visual monitoring. Jobs observed were associated with the refueling and maintenance outage.

Problem Identification & Resolution: Licensee CAP documents associated with ALARA planning and controls were reviewed and assessed. This included a review of selected Action Requests (PERs), self-assessments, and audits. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NMP-GM-002, Corrective Action Program, Version 13.1 and NMP-GM-002-001, Corrective Action Program Instructions, Version 33.1. The inspectors also evaluated the scope and frequency of the licensee's self-assessment program and reviewed recent assessment results.

ALARA program activities were evaluated against the requirements of UFSAR Section 12, Radiation Protection; TS Section 5.4, Procedures and 5.5, Programs and Manuals; 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

a. Inspection Scope

Engineering Controls: The inspectors reviewed the use of temporary and permanent engineering controls to mitigate airborne radioactivity during the 2R23 refueling outage. The inspectors observed the use of portable air filtration units for work in U2 contaminated areas 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, including jobs where engineering controls were not practical or sufficient. This included review of devices used for routine tasks and devices stored for use in emergency situations. Selected Self-Contained Breathing Apparatus (SCBA) units and negative pressure respirators (NPR)s 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 observed the use of powered air-purifying respirators during under-vessel maintenance work. 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. The inspectors reviewed respirator qualification records for a few Main Control Room operators and emergency responder personnel in the Maintenance and HP departments. In addition, inspectors evaluated qualifications for individuals responsible for testing and repairing SCBA vital components.

Problem Identification and Resolution: The inspectors reviewed and assessed CAP documents associated with airborne radioactivity mitigation and respiratory protection. 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 the requirements of FSAR Section 12, TS Section 5.4, 10 CFR Part 20, and applicable licensee procedures; and against the guidance in Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection". Documents reviewed are listed in the Attachment.

b. Findings

No findings identified.

2RS4 Occupational Dose Assessment

a. Inspection Scope

External Dosimetry: The inspectors reviewed the licensee's National Voluntary Accreditation Program (NVLAP) certification data for accreditation for 2014-2015 for Ionizing Radiation Dosimetry. The inspectors reviewed program procedures for processing active personnel dosimeters (ED)s and onsite storage of Optically Stimulated Luminescent Dosimeters (OSLD)s. Comparisons between ED and OSLD results, including correction factors, were discussed in detail. The inspectors also reviewed dosimetry occurrence reports regarding alarming dosimeters.

Internal Dosimetry: 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, the assignment of dose, and the frequency of measurements depending on the nuclides. Inspectors reviewed and evaluated Whole Body Counter (WBC) records selected from January 2013 to March 2015. The inspectors evaluated the licensee's program for *in vitro* monitoring, however there were no dose assessments using this method to review. There were no internal dose assessments for internal exposure greater than 10 millirem committed effective dose equivalent to review, however inspectors did review internal dose assessment investigations.



Special Dosimetric Situations: The inspectors reviewed records for declared pregnant workers (DPW)s from January 2013 through February 2015 and discussed guidance for monitoring and instructing DPWs. Inspectors reviewed the licensee's practices 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.

Problem Identification and Resolution: The inspectors reviewed and discussed licensee CAP documents associated with occupational dose assessment. Inspectors evaluated the licensee's ability to identify and resolve the identified issues in accordance with procedure NPM-GM-002, "Corrective Action Program".

HP program occupational dose assessment activities were evaluated against the requirements of FSAR 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

a. Inspection Scope

Radiation Monitoring Instrumentation: During walk-downs of the auxiliary building and the RCA exit point, the inspectors observed installed and portable radiation detection equipment. These included area radiation monitors (ARM)s, continuous air samplers, liquid and gaseous effluent monitors, PCMs, SAMs, PMs, a WBC, count room equipment, and portable survey instruments. The inspectors observed the physical location of the components, noted their material condition, observed the calibration and source check stickers, and discussed performance of equipment with RP personnel.

In addition to equipment walk-downs, the inspectors observed source functional checks of portable detection instruments, including ion chambers and telepoles. For the portable instruments, the inspectors observed the use of a high-range calibrator and discussed periodic output value testing, calibration, and source check processes with health physics technicians. The inspectors reviewed calibration records and discussed with chemistry personnel alarm setpoint values for PCMs, PMs, effluent monitors, WBCs, and an ARM. This included a sampling of instruments used for post-accident monitoring such as a containment high-range radiation monitor and effluent monitors for noble gas and iodine. The inspectors reviewed quality check calibration efficiency information for count room gamma detectors and a liquid scintillation detector. The inspectors also observed calibration dates for selected EDs at the RCA entry point.

Problem Identification and Resolution: The inspectors reviewed selected CAP reports in the area of radiological instrumentation. The inspectors evaluated the licensee's ability

to identify and resolve the issues in accordance with procedure NMP-GM-002-001, "Corrective Action Program Instructions."

Effectiveness and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; FSAR Chapters 11 and 12; and applicable licensee procedures. Documents reviewed are listed 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 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between 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. 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 scrams per 7,000 critical hours
- unplanned power changes per 7,000 critical hours
- unplanned scrams with complications

For the period January 2014 and January 2015, the inspectors reviewed plant records and verified the accuracy of reported data that were used to calculate the value of each PI.

Cornerstone: Occupational Radiation Safety

- Occupational Exposure Control Effectiveness

The inspectors reviewed the PI results from January 2014 through January 2015. For the assessment period, the inspectors reviewed ED alarm logs and selected CRs related to controls for exposure significant areas. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data.

Cornerstone: Public Radiation Safety

- Radiological Control Effluent Release Occurrences

The inspectors reviewed PI results from February 2014 through January 2015. For the assessment period, the inspectors reviewed cumulative and projected doses to the public contained in liquid and gaseous release permits and CRs related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data.

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 followup. 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 following two condition reports:

- CR 902506, Embedded Conduit cut during Core Drill
- CR 10005250, Loss of Feedwater Heating while Placing 7<sup>th</sup> Stage Heaters in Service

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 root and contributing causes 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

Introduction: A self-revealing Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Procedures, Instructions, and Drawings," was identified for failure to

provide adequate instructions in the Design Change Package (DCP) SNC467474, "Unit 2 FLEX Alternate Power Modifications," to perform core drills in the Unit 2 control building to support conduit installations. DCP SNC467474, "Unit 2 FLEX Alternate Power Modifications," did not provide adequate instructions to identify existing embedded conduit in the vicinity of prescribed core drills location.

Description: On December 5, 2014, the licensee implemented DCP SNC467474 which required core drills in the Unit 2 control building to support conduit installations. The core drill locations were prescribed in DCP SNC467474 special design considerations. While performing a core drill, two embedded conduits containing energized circuits were severed. A ground alarm and loss of indication on valve 2P41F316A, division I PSW isolation to the turbine building, was observed in the main control room, but was not immediately attributed to the core drill activity. After completion of the core drill activity, the licensee noted the cut conduit and cabling in the core and notified the control room. 2P41F316A was declared out of service and Technical Specification 3.7.2 condition B was entered for one PSW turbine building isolation valve being inoperable. 2P41F316A was returned to service on December 11, 2014. The licensee discovered indication and non-safety related shutdown cabling associated with 2A emergency diesel generator (EDG) were also severed. Although these severed cables did not make the 2A EDG inoperable, the 2A EDG was taken out service for ground and continuity tests and for rerouting of the severed cabling.

During the development of DCP SNC467474, the licensee failed to identify existing embedded conduit in the control building. The DCP referenced procedure 52GM-MME-029-0, "Core Drilling through External Walls," and plant drawing H-29035 which provided details for the types of core drill installation. However, the location of the embedded conduit, which was shown on drawings H-13119 and H-13122, was not documented in the DCP. Also, procedure 52GM-MME-029-0 was not applicable for the work being performed in the control building and neither this procedure nor plant drawing H-29035 required verification of the core drill site for embedded conduit. The licensee's site design acceptance, implementation lead engineer, and implementation readiness reviews failed to identify the potential interference issues related to core drill locations prescribed in DCP SNC467474.

Analysis: Failure to provide adequate instructions in DCP SNC467474 to perform core drills in the Unit 2 control building was a performance deficiency (PD). This PD is more than minor because it affected the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective in that 2P41F316A was rendered incapable of performing its' safety related function of closing in the event of an accident condition. The inspectors screened this finding using IMC 0609, Appendix A, "The Significant Determination Process (SDP) For Findings At-Power", dated June 19, 2012. The finding screened as Green per Section A. of Exhibit 2, "Mitigating Systems Screening Questions," because the inoperability did not last longer than the technical specification (TS) allowed out time. The inspectors determined the performance deficiency has a cross-cutting aspect of "work management" in the human performance area because the licensee's work process did not identify and manage the risk commensurate to the core drill work. [H.5]

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Procedure, Drawings, and Instructions," required in part that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Contrary to this requirement, on December 5, 2014, licensee personnel implemented instructions that were not appropriate to the circumstance for core drilling in the Hatch Unit 2 control building. Embedded conduit in the prescribed core drill location which contained energized electrical cables were not identified when developing DCP SNC467474. Immediately following the identification of the severed embedded conduit, all work was stopped and systematic reviews were performed prior to allowing the work to resume. On December 11, 2014, 2P41F316A was returned to operable status following cable replacement. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. The violation was entered into the licensee's corrective action program as CR 902506. (NCV 05000321, 366/2015001-03, Failure to Identify Embedded Conduit prior to Core Drill Operations)

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report (LER) 05000321, 366/2013-004-00, 01, 02, 03: Postulated Inter-cable Fault Vulnerability for RHR Shutdown Cooling Isolation Valves During a Postulated Fire Event Results in Unanalyzed Condition

On April 1, 2014, the licensee submitted a revised LER documenting the discovery of a condition of non-compliance with the site's fire protection program (FPP). The licensee failed to protect cables associated with the RHR shutdown cooling suction valves 1E11-F008 and 1E11-F009 located in Fire Area 1203F (Unit 1 Reactor Building, south of column R7), and valves 2E11-F008 and 2E11-F009 located in Fire Area 2203F (Unit 2 Reactor Building, north of column R19) to ensure that one train of cables of redundant systems or equipment necessary to achieve and maintain hot shutdown conditions, located in the same fire area, outside of primary containment was free of fire damage. This condition could prevent operators from achieving and maintaining safe shutdown (SSD) of the plant, in the case of a postulated fire. The inspectors reviewed documents related to the LER and discussed the condition with the licensee to assess the adequacy of the licensee's compensatory measures and corrective actions. The enforcement aspects related to this LER are dispositioned in Section 4OA7.

.2 (Closed) LER 05000321, 366/2014-001-00, 01: Unfused DC Ammeter Circuits Result in an Unanalyzed Condition

a. Inspection Scope

On April 28, 2014, the licensee submitted an LER documenting the discovery of a condition of non-compliance with the site's fire protection program (FPP). This condition could prevent operators from achieving and maintaining safe shutdown (SSD) of the plant, in the case of a postulated fire. The inspectors reviewed documents related to the LER and discussed the event with plant personnel to assess if the licensee's compensatory measures and corrective actions were adequate.

b. Findings

Introduction: The licensee identified a non-compliance with Hatch Renewed License Conditions 2.C.(3) and 2.C.(3)(a), for Units 1 and 2. The licensee failed to provide short circuit protection for non-safety-related associated circuits which could result in a secondary fire in another fire area and adversely affect SSD capability.

Description: During a review of industry operating experience (OE) related to unfused DC ammeter circuits the licensee determined that certain DC ammeter circuits lacked short circuit protection. A postulated fire in a fire area containing affected DC ammeter circuit cabling could result in concurrent shorts in the circuit. Due to the lack of short circuit protection, the resultant excessive current flow in the DC ammeter cable could result in a secondary fire in another fire area and adversely affect SSD equipment or cables for SSD equipment. Multiple fire areas in the Control Building were potentially affected.

Section 9.6.2.4 of Appendix E of the licensee's Fire Hazards Analysis (FHA) categorizes associated circuits of concern into 3 types. Type C associated circuits were defined as nonsafe shutdown circuits which shared a common enclosure with safe shutdown circuits and were not electrically protected by an automatic fault protection device or were not inherently self-protected because the circuit lacks sufficient energy to cause circuit damage. A subsequent paragraph in Section 9.2.6.4 stated that Type C associated circuits are electrically protected by automatic fault interrupting devices, do not carry sufficient energy to cause cable damage, and will not propagate fire into a common enclosure in another fire area. The licensee's OE review determined that certain DC ammeter circuits were not provided with automatic fault interrupting devices, and thus, invalidates the SSD evaluation bases stated in Section 9.6.2.4 of the FHA. Upon discovery, the licensee implemented roving fire watches for the affected areas.

Analysis: The licensee's failure to provide short circuit protection for DC ammeter circuits is a performance deficiency. This finding is more than minor because it is associated with reactor safety mitigating system cornerstone attribute of Protection Against External Events (i.e., fire) and adversely affected the cornerstone objective in that not providing circuit protection could have affected the licensee's SSD capability. Because this issue relates to fire protection, and this noncompliance was identified by the licensee as a part of the site's transition to NFPA 805, this issue is being dispositioned in accordance with Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" of the NRC Enforcement Policy.

In order to verify that this non-compliance was not associated with a finding of high safety significance (Red), a bounding phase 3 SDP risk analysis was performed by a regional SRA using the guidance from NRC Inspection Manual Chapter 0609 Appendix F and NUREG/CR 6850 revision 0 and Supplement 1. The analysis used inputs from the licensee's NFPA 805 project for ignition frequency and cable routing data. The major analysis assumptions were: a one year exposure period, two proper DC polarity hot shorts required to achieve the high current conditions for secondary fires, and all ignition sources for each affected fire zone assumed to damage the ammeter cables.

Based on this bounding risk analysis, the regional SRA determined that this performance deficiency resulted in a CDF increase for each Hatch Unit 1 and 2 of less than  $1E-4$ /year (i.e., less than Red). The licensee also performed a risk assessment using their Hatch fire probabilistic risk assessment model which also produced a result  $<1E-4$  for each Hatch unit. No cross cutting aspect was applicable because this finding was not indicative of current licensee performance.

Enforcement: Hatch Renewed license conditions 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively, stated, in part, that the licensee shall implement and maintain in effect all provisions of the fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, which was originally submitted by letter dated July 22, 1986. Section 9.6.2.4, Circuits Required for Safe Shutdown Equipment, of Appendix E of the FHA states, in part, that associated circuits which share a common enclosure with safe shutdown circuits are electrically protected by automatic fault interrupting devices. Contrary to the above, the licensee failed to implement and maintain in effect all provisions of the fire protection program. On March 14, 2014, the licensee discovered that circuits for certain DC ammeters did not contain any form of short circuit protection in accordance with the FHA. Upon discovery, the licensee entered the condition into the corrective action program (CRs 776073 and 787145), and implemented appropriate compensatory measures in the form of roving fire watches for the affected areas.

Because the licensee committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement and reactor oversight process (ROP) discretion for this issue in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Inspection Manual Chapter 0305. This noncompliance was identified by the licensee and will be addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program, immediate corrective action and compensatory measures were taken, it was not likely to have been previously identified by routine licensee efforts, it was not willful, and it was not associated with a finding of high safety significance (Red).

#### 40A5 Other Activities

##### .1 Institute of Nuclear Power Operations Report Review

In accordance with Executive Director of Operations Procedure 0220, "Coordination with the Institute of Nuclear Power Operations," the inspectors reviewed the most recent INPO evaluation and accreditation reports dated November 19, 2014 to determine if those reports identified safety or training issues not previously identified by NRC evaluations. The report contained no safety issues that were not already known by the NRC.

#### 4OA6 Meetings, Including Exit

On April 27, 2015, the resident inspectors presented the inspection results to Mr. David Vineyard and other members of the licensee's staff. The resident inspectors presented the inspection results again on April 30, 2015, to Mr. Greg Johnson. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

#### 4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) or Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

- 10 CFR Part 50.48(b)(1) required that all nuclear power plants licensed to operate prior to January 1, 1979, must satisfy the applicable requirements of 10 CFR Part 50, Appendix R, Sections III.G.2 or III.G.3. Contrary to the above, since November 1985, the licensee has not met the requirements of 10 CFR Part 50, Appendix R, Sections III.G.2 or III.G.3, in that the licensee failed to provide adequate protection of cables and equipment of redundant trains of systems necessary to achieve and maintain hot shutdown conditions located in the same fire area by either (a) a 3-hour rated fire barrier; (b) 20 feet of spatial separation with detection and suppression installed in the fire area; or (c) a 1-hour rated fire barrier with detection and suppression installed in the fire area; or by providing alternative shutdown capability for the areas where adequate cable protection was not provided. This violation was determined to be of very low safety significance (Green) based on the results of the IMC 0609, Appendix F, "Fire Protection Significance Determination Process," Phase III Quantitative Screening Approach. This violation was documented in the licensee's CAP as CRs 687178, 688543, 687173, and 692904.
- Technical Specification 5.7.2 requires areas with radiation levels greater than or equal to 1000 mrem/hr, measured at 30 cm from the radiation source or from any surface the radiation penetrates, but less than 500 Rads in 1 hour measured at 1 meter from the radiation source or from any surface the radiation penetrates shall be provided with a locked or continuously guarded doors to prevent unauthorized entry. Contrary to this on 12/18/14, a RPT found the Unit 1 Recombiner Preheater "B" room door propped open and not posted as a LHRA. Follow-up surveys of the area identified maximum radiation levels of 1600 mR/hr at 12 inches from surface of the preheater. This finding was of very low safety significance (Green) because there was no substantial potential for overexposure and the licensee's ability to assess dose was not compromised. This violation was documented in the licensee's CAP as CAR 249078.

ATTACHMENT: SUPPLEMENTAL INFORMATION



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee personnel**

B. Anderson, Health Physics Manager  
G. Brinson, Maintenance Director  
V. Coleman, Chemistry Manager  
D. Cordes, SNC Corporate Engineering Programs  
A. Giancatarino, Engineering Director  
A. Gordon, ISI Program Owner  
D. Komm, Operations Director  
K. Long, Work Management Director  
J. Major, Licensing Engineer  
B. Mathews, Welding & Repair/Replacement Coordinator  
R. Spring, Plant Manager  
S. Tipps, Principal Licensing Engineer  
M. Torrance, Nuclear Oversight Manager  
D. Vineyard, Vice President  
A. Wheeler, Site Projects Manager  
K. White, SNC ISI Level III

### **LIST OF REPORT ITEMS**

#### **Closed**

LER 05000321, 366/2013-004-00, 01, 02, 03, Postulated Inter-cable Fault Vulnerability for RHR Shutdown Cooling Isolation Valves During a Postulated Fire Event Results in Unanalyzed Condition (Section 4OA3)  
LER 05000321, 366/2014-001-00, 01: Unfused DC Ammeter Circuits Result in an Unanalyzed Condition (Section 4OA3)

#### **Opened & Closed**

NCV 05000321/366, 20150001-01, Failure to perform adequate surveys of air samples for alpha activity (Section 2RS1)  
NCV 05000321/366, 20150001-02, Failure to perform complete analysis of air samples (Section 2RS1)  
NCV 05000321, 366/2015001-03, Failure to Identify Embedded Conduit prior to Core Drill Operations (Section 4OA2)

### **LIST OF DOCUMENTS REVIEWED**

#### **Section 1R01: Adverse Weather**

##### **Procedures**

52PM-MEL-005-0, "Cold Weather Checks," Ver. 17.0  
52PM-MEL-005-0, "Cold Weather Checks," Ver. 17.1  
DI-OPS-36-0989, "Cold Weather Checks," Ver. 23.1

WO: SNC565470

Attachment

**Section 1R04: Equipment Alignment****Procedures**

34SO-C41-003-1, "Standby Liquid Control System," Ver. 12.2  
 34SO-R43-001-2, "Diesel Generator Standby AC System," Ver. 28.2  
 34SO-E11-010-1, "Residual Heat Removal System," Ver. 44.2

**Drawings**

H-16061, Standby Liquid Control System P&ID  
 D-11004, RHR Service Water Outside Building P&ID

CR10004658

**Section 1R05: Fire Protection****Procedures**

E.I. Hatch Fire Protection Fire Hazards Analysis  
 31GO-OPS-026-0, Use, Control and Storage of Flammable/Combustible Materials, Version 1.0

**Drawings**

A-43965 sheet 13A/B, Unit 1 Pre-Fire Plan 1008  
 A-43965 sheet 20A/B, Unit 2 Pre-Fire Plan 2008  
 A-43965 sheet 14A/B, Unit 1 Pre-Fire Plan RPS Battery Room 1B Control Bldg Elevation 112'-0"  
 A-43965 sheet 15A/B, Unit 1 Pre-Fire Plan RPS Battery Room 1A Control Bldg Elevation 112'-0"  
 A-43965 sheet 21A/B, Unit 2 Pre-Fire Plan RPS Battery Room 2A Control Bldg Elevation 112'-0"  
 A-43965 sheet 22A/B, Unit 2 Pre-Fire Plan RPS Battery Room 2B Control Bldg Elevation 112'-0"  
 A-43965 sheet 28A/B, Unit 1 Pre-Fire Plan W 600V Switchgear Room 1C Control Bldg Elevation 130'-0"  
 A-43965 sheet 28A/B, Unit 1 Pre-Fire Plan E 600V Switchgear Room 1D Control Bldg Elevation 130'-0"  
 A-43965 sheet 37A/B, Unit 2 Pre-Fire Plan W 600V Switchgear Room 2C Control Bldg Elevation 130'-0"  
 A-43965 sheet 38A/B, Unit 2 Pre-Fire Plan E 600V Switchgear Room 2D Control Bldg Elevation 130'-0"  
 A-43965 sheet 108A/B, Unit 2 Pre-Fire Plan Main Steam Chase Reactor Bldg. Elevation 130'-0"  
 A-43965 sheet 104A/B, Unit 2 Pre-Fire Plan North Torus Area, Reactor Bldg. El. Below 130'-0"  
 A-43965 sheet 105A/B, Unit 2 Pre-Fire Plan South Torus Area, Reactor Bldg. El. Below 130'-0"  
 B-19631 sheet 74A, Unit 1 penetration seals

**Section 1R06: Internal Flood Protection**

Hatch Individual Plant Examination  
 Updated Final Safety Analysis Report  
 42SV-EEL-002-0, "Surveillance for the water protection of electrical equipment," Ver. 2.5

**Section 1R07: Heat Sink Performance**

42IT-TET-012-2, "Plant Service Water and RHR Service Water Piping Inspection Procedure,"  
 Ver. 3.8  
 SNC400929

**Section 1R08: Inservice Inspection Activities**Corrective Action Documents

CR10023560, Service Water Leak in 2C EDG Supply Piping  
 CR10027739, Rejectable Indications Identified during PT Examination  
 SR594045, Snubber Degraded due to Low Oil Level  
 SR604739, Support 2E11-RHR-R76 Failed VT-3 Examination  
 SR646818, Incorrect Weld Process Control Sheet Used  
 SR743092, Qualification QA Records for Two Welders Could Not Be Found in Documentum  
 SR771270, Incorrect Version of NMP-ES-024-401 Used for NDE Examinations  
 SR773428, Work Performed without an Approved Repair & Replacement Plan  
 SR776979, ½" Coupling Welded in the Wrong Location  
 SR807070, Service Water Leak on Drywell Cooler Supply Piping

Drawings

A-43, Hatch Main Steam System: Drywell/Steam Chase, Rev. 0

Procedures

51GM-MNT-065-0, Weld Process Control, Ver. 4.4  
 NMP-ES-024-301, Liquid Penetrant Examination Color Contrast and Fluorescent, Ver. 11.0  
 NMP-ES-024-401, Magnetic Particle Examination, Ver. 10.0  
 NMP-ES-024-502, PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds (Appendix VIII), Ver. 5.0

Other Documents

0010829140, Exelon Generation Certificate of Calibration: IR Thermometer (SN 19330362), dated 7/1/2014  
 213174-TR-001, WSI Traveler: N4A Overlay – Common Prerequisites and Closure, Rev. 1  
 213174-TR-002, WSI Traveler: N4A Overlay, Rev. 1  
 45QC-QCX-003-0S, Control of Calibrated Equipment: 10# Test Weight (QC-182), dated 12/18/95  
 A0143-52, Welding Services Inc. Procedure Qualification Record, dated 8/8/95  
 A43256-52, Welding Services Inc. Welding Procedure Specification, Rev. 2  
 AZZ WSI LLC Welder Maintenance Log (Johnson, machine GTAW), printed current on 2/18/2015  
 AZZ WSI LLC Welder Maintenance Log (Ledford, machine GTAW), printed current on 2/18/2015  
 AZZ WSI LLC Welder Maintenance Log (Pruitt, machine GTAW), printed current on 2/18/2015  
 AZZ WSI LLC Welder Performance Qualification Record (Johnson, machine GTAW), dated 1/20/2015  
 AZZ WSI LLC Welder Performance Qualification Record (Ledford, machine GTAW), dated 12/10/2013  
 AZZ WSI LLC Welder Performance Qualification Record (Pruitt, machine GTAW), dated 10/8/2013  
 DOEJ-HXSNC10023560-S001, Evaluation for Hatch Unit 2, Division 2, 8" HEE PSW Piping I15H2002, Southern Nuclear Indication Notification Form: Indications on 2B21-1MS-3-8 & -20, dated 2/19/2015  
 Magnaflux Letter of Certification: 8A Red Powder, Batch #00C050, dated 3/15/2000  
 PQR-01-01-T-802, Welding Services Inc. Procedure Qualification Record, Rev. 2

S14H2P006, Liquid Penetrant Examination Report, dated 2/19/2015  
 S14H2P007, Liquid Penetrant Examination Report, dated 2/19/2015  
 S14H2P008, Liquid Penetrant Examination Report, dated 2/19/2015  
 S14H2P009, Liquid Penetrant Examination Report, dated 2/19/2015  
 S15H2M005, Magnetic Particle Examination Report, dated 2/19/2015  
 S15H2P013, Liquid Penetrant Examination Report, dated 2/19/2015  
 S15H2U034, UT Calibration/Examination Report, dated 2/19/2015  
 Sonic Systems International, Inc. Vision Acuity Record (Anderson), dated 9/11/2014  
 Sonic Systems International, Inc. Vision Acuity Record (Teer), dated 4/28/2014  
 Sonic Systems International, Inc. Vision Acuity Record (Wannamaker), dated 1/23/2015  
 Southern Company NDE Examiner Certification Review (Anderson, UT), dated 1/15/2015  
 Southern Company NDE Examiner Certification Review (Teer, MT/PT), dated 1/21/2015  
 Southern Company NDE Examiner Certification Review (Wannamaker, MT/PT), dated  
 1/27/2014  
 WPS 01-43-T-803-102836, Welding Services Inc. Welding Procedure Specification, Rev. 5

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

Drill Scenario: LT-SG-50317-16.3  
 34GO-OPS-013-2, "Normal Plant Shutdown," Ver. 31.0  
 34SV-N30-004-2, "Turbine Off-Line Overspeed and ETD Trip Testing," Ver. 2.2  
 34GO-OPS-005-2, "Power Changes," Ver. 28.3

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

System Health Report –T48 System – 4th quarter 2014  
 System Health Report –T46 System – 1st quarter 2015  
 T48 Maintenance Rule (MR) Scoping Manual Documents  
 T48 MR Performance Criteria  
 T46 Maintenance Rule (MR) Scoping Manual Documents  
 T46 MR Performance Criteria  
 NMP-ES-002, System Monitoring and Health Reporting, Ver 17.0  
 CARs 210239 and 248785  
 CRs 807437, 829185, 10005946, 902894

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

CR 10004914  
 Equipment Out of Service calculations 1/17/15-1/23/15  
 Equipment Out of Service calculations 1/24/15-1/30/15  
 Equipment Out of Service calculations 2/7/15-2/13/15  
 Equipment Out of Service calculations 2/21/15-2/27/15  
 Equipment Out of Service calculations 3/21/15-3/27/15

### **Section 1R15: Operability Evaluations**

Procedures  
 NMP-AD-012, "Operability Determinations and Functional Assessments," Ver. 12.4  
 42SV-EEL-002-0, "Surveillance of Seals Used for the Water Protection of Electrical Equipment,"  
 Ver. 2.5  
 Drawings A-27018, H50385, H50386, H50387

Other

TFP800-07-2010 "ProtectoSpray Sprinkler Nozzle"

DCR83-234

ABN86-740

ABN86-740 (Additional Info)

Enclosure to GPC Letter SL-1283, pg E-5, 09/10/1986

SNC-85-007, "Calculation for DCR83-235"

CRs 10010528, 10007321, 10016864, 10024873, 10023560, 10035329, 10042321

CAR 254999

DOEJ-HXSNC10023560-S001, "Evaluation for Hatch Unit 2, 8" HEE PSW Piping"

**Section 1R18: Plant Modifications**Procedures

NMP-ES-084-005, "Temporary Configuration Change Process," Ver. 2.0

**Section 1R19: Post Maintenance Testing**Maintenance Work Orders (MWOs)SNC113098, SNC610454, SNC635384, SNC584357, SNC430192, SNC394670, SNC562008,  
SNC413701Procedures

95IT-OTM-001-0, "Maintenance Work Order Functional Test Guideline," Ver. 5.5

NMP-MA-014-001, "Post Maintenance Test Guidance," Ver.3.0

52SV-R43-001-0, "Diesel, Alternator, and Accessories Inspection," Ver. 25.3

34SV-R43-004-2, "Diesel Generator 2A Semi-Annual Test," Ver. 17.2

34SV-T46-003-2, "Standby Gas Treatment Ventilation and Operability," Ver.9.1

34SV-T22-001-0, "Secondary Containment Test," ver. 16.0

42IT-TET-006-2, "ISI Pressure Test of the Class 1 System and Recirc. Pump(s) Runback Test,"  
Ver.18.552CM-E41-002-0, "High Pressure Coolant Injection System Main Pump Inspection/Overhaul,"  
Ver. 7.0

34SV-E41-002-2, "HPCI Pump Operability," Ver. 36.1

CR 10022744

**Section 1R20: Refueling and Outage Activities**Operating Logs

34GO-OPS-001-2, "Plant Startup," Ver. 46.3

34GO-OPS-003-2, "Startup System Status Checklist," Ver.13.15

34GO-OPS-013-2, "Normal Plant Shutdown," Ver. 31.1

34GO-OPS-015-2, "Maintaining Cold Shutdown of Refuel Conditions," Ver. 14.0

**Section 1R22: Surveillance Testing**Procedures

34SV-SUV-019-1, "Surveillance Checks," Ver. 37.9

34SO-G11-013-1, "Drywell and Reactor Building Sumps System," Ver. 14.3

34SV-R43-005-2, "Diesel Generator 1B Semi-Annual Test," Ver. 19.1

34SV-T22-001-0, "Secondary Containment Test," Ver. 16.0

42SV-TET-001-2, "Primary Containment Periodic Type B and Type C Leakage Test," Ver. 36  
 42SV-TET-001-0, "LLRT Testing Methodology," Ver. 9.0  
 34SV-E41-001-2, "HPCI Valve Operability," Ver.13.1

CRs 10023486 and 10023159

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

Procedures, Guidance Documents, and Manuals

NMP-HP-206, Issuance, Use and Control of Radiation Work Permits, Ver. 3.0  
 NMP-HP-300, Radiation and Contamination Surveys, Ver. 3.0  
 NMP-HP-302, Restricted Area Classification, Postings, and Access Control, Ver. 7.0  
 NMP-HP-302-001, Radiological Key Control, Ver. 2.1  
 NMP-HP-305, Alpha Radiation Monitoring, Ver. 5.0  
 NMP-HP-400, Control and Accountability of Radioactive Sources, Ver. 2.0  
 NMP-HP-404, Release of Materials from the RCA and Protected Areas, Ver. 2.0  
 62RP-RAD-008-0, Radiation and Contamination Surveys, Ver. 12.3  
 62RP-RAD-009-0, Air Sampling and Concentration Determination, Ver. 5.5  
 62RP-RAD-016-0, Control of High Radiation Areas, Ver. 33.0  
 62RP-RAD-019-0, Health Physics  
   Start-Up Surveillance, Ver. 9.0  
 62RP-RAD-047-0, Independent Spent Fuel Storage Installation and Radiological Controls, Ver. 2.6  
 62RP-RAD-050-0, Operation of the Waste Separation and Temporary Storage Facility and Sealand Storage Facility, Ver. 3.0  
 62RP-RAD-055-0, Underwater Storage and Inventory of Radioactive Materials in the Spent Fuel Pool, Ver. 4.0  
 60AC-HPX-004-0, Radiation & Contamination Control, Ver. 21.3  
 60AC-HPX-007-0, Control of Radioactive Materials, Ver. 8.4  
 Nuclear Management Guide (NMG), NMP-DP-001-GL01, Risk Management Worksheets, Ver. 9.4  
 Radiation Protection Procedure 62RP-RAD-019-0, Health Physics Start-Up Surveillance, Ver. 9.0  
 General Maintenance Procedure 52GM-MME-015-1, Reactor Vessel Disassembly, Rev. 20.1  
 General Maintenance Procedure 52GM-MME-015-2, Reactor Vessel Disassembly, Rev. 15.0  
 Form HPX-1082, High Radiation Area Entrance Surveillance at 20% Power Unit 1, Ver. 11.0  
 Form HPX-1083, High Radiation Area Entrance Surveillance at 20% Power Unit 2, Ver. 9.0  
 Form HPX-1084, Health Physics Start-Up Surveillance Checklist, Ver. 14.0

Records and Data

Edwin I. Hatch Nuclear Plant Collective Exposure Reduction Plan (2008-2015)  
 E.I. Hatch NSTS Annual Inventory Reconciliation Report, 01/07/2015  
 Gamma Spectroscopy Results: Sample ID 63163, U2 RX Cavity Particulate, 02/10/2015;  
   Sample ID 63164, U2 RX Cavity Charcoal, 02/10/2015; Sample ID 63172, RB 203 U2 Loss of RF Floor Particulate, 02/10/2015; Sample ID 63173, RB 203 U2 Loss of RF Floor Charcoal, 02/10/2015; Sample ID 63901, RF Floor (RPV Hood smear #2), 02/25/2015; Sample ID 63902, RF Floor (RPV Hood smear #1), 02/25/2015;  
 Hatch Plant Characterization Study [Alpha Characterization], Rev. 3 July 2012  
 Health Physics Log, Day Shift, 01/14/2015

List, Radioactive Standard Inspection and Inventory Check Report, 01/08/2015  
 Online/Electronic Initial ALARA/RWP Briefing for Unit 2 Refueling Outage [PowerPoint Presentation], for multiple Drywell, Reactor Building, Refueling, Turbine, and Condenser Bay Radiation Work Permits, 02/09/2015  
 Plant Hatch Alpha Levels (Comparing 100cm<sup>2</sup> Samples) for the period 01/01/2014 to 02/10/2015  
 Plant Hatch NRC Source Category Report, 01/08/2015  
 Plant Hatch Radiological Information Survey #:

- # 83659, 5 Year Routine ISFSI Survey, 11/18/2011
- # 106240, ISFSI Perimeter survey for Annual survey, 11/07/2013
- # 106241, ISFSI Annual Survey, 11/07/2013
- # 116599, ISFSI Annual Survey, 10/09/2014
- # 116600, ISFSI Perimeter survey for Annual survey, 10/09/2014
- # 117572, Sea-Land Storage Facility Routine Survey, 11/14/2014
- # 118343, U1 Radwaste 132' Monthly Survey, 12/12/2014
- # 118662, Reactor Building 228' LHRA Surveillance (Irradiated Component Storage Locks), 12/18/2014
- # 118663, Reactor Building 228' LHRA Surveillance (Irradiated Component Storage Locks), 12/18/2014
- # 118674, U1 Recombiner Preheater B LHRA posting verification, 12/19/2014
- # 118900, U1 Turbine Building 130' Monthly survey, 12/28/2014
- # 118995, WSTSF Weekly Locked High Radiation Area Entrance Surveillance, 01/01/2015
- # 119003, Unit 2 Weekly Locked High Radiation Area Entrance Surveillance, 01/01/2015
- # 119004, Unit 1 Weekly Locked High Radiation Area Entrance Surveillance, 01/01/2015
- # 119114, Reactor Building 228' LHRA Surveillance (Irradiated Component Storage Locks), 01/06/2015
- # 119260, U1 Control Building 130' Routine Survey, 01/11/2015
- # 120180, U1 Control Building 130' Routine Survey, 02/07/2015
- # 120253, U2 Drywell 114' Elevation Initial Survey, 02/09/2015
- # 120262, U2 Subpile Room Initial Survey, 02/09/2015
- # 120295, U1 & 2 Rx Bldg. 228' (refuel Floor) Shiftly Routine, 02/09/2015
- # 120380, U1 Radwaste All Elevations Routine Survey, 02/10/2015
- # 120444, U1 & 2 Rx Bldg. 228' (refuel Floor) Shiftly Routine, 02/11/2015
- # 120461, U2 Drywell 147' Remove Insulation From SRV's, 02/11/2015
- # 120475, U2 Drywell 147' Remove Insulation From SRV's, 02/12/2015
- # 120484, U1 Rx Bldg. 228' (refuel Floor) Routine Survey, 02/12/2015
- # 120513, Sea-Land Storage Facility Routine Survey, 02/12/2015
- # 120524, U2 Subpile Room - Dose Gradient Surveys, 02/12/2015
- # 120526, U1 & 2 Rx Bldg. 228' (refuel Floor) Down post contamination survey, 02/12/2015
- # 120619, CA boundary move and Shiftly Routine, 02/13/2015
- # 120981, U1 & 2 Rx Bldg. 228' (refuel Floor) C zone release, 02/17/2015
- # 121224, U2 CRD Push/Pull Smears, 02/20/2015
- # 121339, U1 Rx Bldg. 228' (refuel Floor) Daily Survey on R/F floor, 02/21/2015
- # 121480, U1 Turbine Building 130' Monthly survey, 02/22/2015
- # 121559, U2 RWCU HX Maint. installing 3060 and 036 valves and identify 2G41D010, 02/23/2015

# 121618, ISFSI NRC walkdown, 02/24/2015  
 # 121739, U2 Torus Proper Filter Survey, 02/25/2015  
 # 121744, U2 RPV Head, 02/25/2015  
 # 121754, U2 RWCU HX, 02/25/2015

Radiation Work Permit (RWP) No. 15-2200, U2 Refuel Floor - Pump/Valve Breach/Repair, Inspections, Mechanical, Electrical, I&C & Support  
 RWP No. 15-2205, U2 Refuel Floor - Vessel Disassembly/Reassembly, Cavity/Dryer Separator Work & Support  
 RWP No. 15-2606, U2 Drywell - Valve Insp., PM, Repair, And Support B21, E11, E21, E41, E51, G11, G12, P33, P21, P41, P42, P51, P52, P70, C11, C41 & D11  
 RWP No. 15-2605, U2 Drywell - ISI & Support Work  
 RWP No. 15-2609, U2 Drywell - B21-F013 ( Safety Relief Valves ) Inspect Repair, Remove, Replace & Support Activities  
 RWP No. 15-2614, U2 Drywell - Subpile Room Wk - Carousel PM/ Repairs, Cable Pull, LPRM(GE) / RPIS, Scaffold, Shielding, Decon, Painting & Support  
 Schedule, H2R23 REV 1, All Activities by Date, 01/09/2015  
 Schedule, H2R23 REV 1, Critical Path, 01/09/2015  
 Spreadsheet, Plant E.I. Hatch Historical Outage Exposure Information (1985-2014), 02/25/2015  
 Site Communication/Information, Plant E.I. Hatch, Unit 2 23<sup>rd</sup> Refuel Outage RWP Information  
 Work Plan, Reactor Cavity Drain Down and Decontamination, no date or revision number  
 Work Plan, Vortex Flushing of Control Rod Blade Guide Tubes, no date or revision number  
 62RP-RAD-055-0, Forms HPX-1191 and HPX-1192, Annual Inventory of U1/U2 Spent Fuel Pools, dated 01/08/2015.

ACD 290478

CARs 206803, 208968, 209131, 209160, 211371

CRs 376141, 564834, 592338, 633992, 660001, 754586, 761799, 769448, 805586, 844033, 10003091, 10026093, 10021539, 10024134, 10024241, 10034556

TEs 661433 and 909555

Nuclear Oversight Summary Report, Hatch Radiation Protection – December 2014

## **2RS2: ALARA**

### Procedures, Guidance Documents, and Manuals

62RP-RAD-012-0, Selection and Use of Temporary Shielding, Ver. 2.0

NMP-AD-035, ALARA Program, Ver. 1.3

NMP-DP-001, Operational Risk Awareness, Ver. 14.2

NMP-HP-204, ALARA Planning and Job Review, Ver. 4.2

NMP-HP-206, Issuance, Use and Control of Radiation Work Permits, Ver. 3.0

### Reports, Records, and Data

ALARA Plan: 5-2603, 2R23 DW/SC Shield Door, Insulation, Temp. Ventilation & Support Including Subpile Room

ALARA Plan: 15-2605, 2R23 DW/SC ISI and Support Activities

ALARA Plan: 15-2606, 2R23 Drywell Valve Maintenance

ALARA Plan: 15-2620, 2R23 Drywell/Steam Chase Install/Remove Shielding, Tents, Scaffolds and Support

ALARA Review Package 14-1205, 1R26 Refuel Floor Vessel Disassembly/Reassembly, Cavity/Dryer Separator Work & Support



ALARA Review Package 14-1600, 1R26 DW/SC Minor Mech/Elec Work & Support Work  
 ALARA Review Package 14-1603, 1R26 DW/SC Shield Door Activities, Remove/Replace  
 Insulation, Temporary Ventilation & Support  
 ALARA Review Package 14-1605, 1R26 DW/SC ISI and Support Activities  
 ALARA Review Package 14-1606, 1R26 DW/SC B21, E21, E51, E11, G12, P33 Inspection, PM,  
 Repair & Support  
 ALARA Review Package 14-1620, 1R26 Drywell/Steam Chase Install/Remove Shielding, Tents,  
 Scaffolds and Support  
 Annual Radiation Protection Program Review for the Year 2013, 06/11/2014  
 E. I. Hatch 2R23 Refueling Outage Drywell/Rx Bldg Shielding Plan and Logbook  
 H2R23 Refueling Outage P.A.R.C. (Plant ALARA Review Committee) Outage Dose Goal  
 Approval, 12/04/2014  
 Plant Edwin I. Hatch Unit 1, 1R26 ALARA Post Outage Review, 05/13/2014  
 Plant E.I. Hatch RP Daily Exposure Report, 02/12/2015 and 02/23/2015  
 Plant E.I. Hatch Unit 1 Recirculation System BWR Radiation Level Assessment and Control  
 (BRAC) Trending, 1993 through 2014  
 Plant E.I. Hatch Unit 2 Recirculation System BWR Radiation Level Assessment and Control  
 (BRAC) Trending, 1993 through 2015  
 Plant Hatch RWP Totals [Dose] for 2013, 2014, and 2015 through 02/12/2015  
 Southern Nuclear Operating Company Strategic Plan for Radiation Exposure Reduction 2015-  
 2020 [includes Plant Hatch], Updated January 2015  
 Spreadsheet, Plant E.I. Hatch Outage Historical RWP Information  
 Temporary Shielding Request - Unit Two 2015 Refueling Outage Shielding Evaluations,  
 07/02/2014  
 Work In Progress Review (WIPR) for: RWP 15-2200, 02/14/2015, RWP 15-2605, 02/24/2015;  
 RWP 15-2609, 02/17/2015; RWP 15-2615, 02/21/2015  
 Worksheet, 2015 Dose Projection

CAR 213121

CRs 597246, 692641, 706226, 72226, 757317, 770381, 802280, 802313, 804958, 880262,  
 885144, 10008045  
 TEs 597807, 707362, TE 723624

### **2RS3: In-Plant Airborne Radioactivity Control and Mitigation**

#### Procedures, Guidance Documents, and Manuals

62RP-RAD-009-0, "Air Sampling and Concentration Determination", Version 5.5  
 NMP-HP-301, "Airborne Radioactivity Sampling and Evaluation", Version 3.0  
 NMP-HP-513, "Operation and Use of the Delta Air Supplied Suit". Version 2.0  
 62HI-OCB-002-0, "Portable HEPA Air Filtration Units and Vacuum Maintenance and Operation",  
 Version 10.1  
 57SV-D11-007-1, "Refueling Floor Exhaust Vent Radiation Monitor Instrument", Version 6.7  
 57SV-D11-008-2, "Reactor Building Exhaust Vent Radiation Monitor Instrument", Version 7.11

#### Records and Data

Gamma Spectroscopy Results sample ID 63161, 228' U2 Refuel Floor Backup to AMS-4 Alarm  
 Part, 02/10/15  
 Gamma Spectroscopy Results sample ID 63162, 228' U2 Refuel Floor Backup to AMS-4 Alarm  
 Char, 02/10/15

Gamma Spectroscopy Results sample ID 63346, TB 164' Air Sample Charcoal, 02/12/15  
 Gamma Spectroscopy Results sample ID 63346, TB 164' Air Sample Particulate, 02/12/15  
 Gamma Spectroscopy Results sample ID 63268, U2 RX Cavity Pulling Head Charcoal, 02/11/15  
 Gamma Spectroscopy Results sample ID 63263, U2 U/V DW Subpile Room Particulate, 02/11/15  
 62RP-RAD-003-0, Grade D Air Analysis Results, 11/11/14  
 SCBA Qualification Records updated 1/22/15  
 62RP-RAD-003-0, SCBA Monthly Inspection Report, 11/11/14  
 62RP-RAD-003-0, SCBA Monthly Inspection Report, 10/10/14  
 Posi3 USB Test Results for Kits: 259, 265, 311, 305, 260, 234, 264, 222 (8/28/14), 237 (8/28/14)  
 Survey #121733, Plant Hatch U2 B Shell Hotwell (2TB112) 02/24/2015  
 Survey #109202, Plant Hatch RPV Head (2RX228) 02/12/2014  
 Survey #120913, Plant Hatch RPV Head (2RX228) 02/16/2015  
 Survey #121733, Plant Hatch U2 B Shell Hotwell (2TB112) 02/24/2015  
 Survey #121396, Plant Hatch U2 B Shell Hotwell (2TB112) 02/21/2015  
 Survey #120924, Plant Hatch U2 Condenser Top View (2CB112) 02/16/2015  
 Survey #121396, Plant Hatch U2 A Shell Hotwell (2TB112) 02/16/2015  
 RWP 15-2205, Disassemble and Reassemble the Reactor for Refueling and Inspection  
  
 CRs 10033022, 769855, 211193, 659232, 644185, 675826, 838131  
 TEs 865095 and 865090

#### **2RS4: Occupational Dose Assessment**

##### Procedures

NMP-HP-305, "Alpha Radiation Monitoring", Version 5.0  
 NMP-HP-105, "Comparison of OSLD and ED Dosimetry Results", Version 1.1  
 NMP-HP-201, "Personnel Dosimetry Program", Version 1.2  
 NMP-HP-108-002, "Use of EDE (Effective Dose Equivalent) Methodologies", Version 2.0  
 NMP-HP-107, "Individual Radiation Exposure Records and Reports", Version 3.1  
 NMP-HP-108, "Issuance, Use, and Collection of Personnel Dosimetry", Version 2.2  
 NMP-HP-303, "Personnel Decontamination", Version 2.3  
 NMP-HP-104, "Use of Calibration of Whole Body Counters", Version 2.0  
 NMP-HP-100, "Bioassay Program", Version 1.1  
 NMP-HP-102, "In-vitro Bioassay", Version 1.1  
 NMP-HP-101, "In-Vivo Bioassay and Internal Dose Assessment", Version 3.0

##### Records and Data

NVLAP Accreditation Certificates, 2013-04-01-2015-03-31  
 Plant Hatch Radiological Information Survey # 118460, PCE#673  
 Plant Hatch Radiological Information Survey # 110826, PCE#663  
 Plant Hatch Radiological Information Survey # 115019, PCE#668  
 NMP-HP-101 Data Sheet 1, Investigation Whole Body Counts, #7025, 15862, 6151, 2/10/15  
 NMP-HP-105 Data Sheet 1, "DDE Discrepancy Investigation Form", 02/11/2015  
 NMP-HP-108 Data Sheet 3, Neutron Dose Calculation Form, RWP 14-00v04, 10/26/14  
 NMP-HP-108 Data Sheet 3, Neutron Dose Calculation Form, RWP 14-0001, 10/25/14  
 NMP-HP-108 Data Sheet 3, Neutron Dose Calculation Form, RWP 14-0250, 11/12/14

Radiological Survey #97658, RPV head (2RX228) 01/14/2013  
 Radiological Survey #98342, RPV head (2RX228) 02/21/2013  
 NMP-HP-301 Data sheet 1, Monthly U1 Torus, Sample #1-11-072, 12/6/12

CR 10000976, 854228, 783607

## **2RS5: Radiation Monitoring Instrumentation**

### Procedures, Guidance Documents, and Manuals

NMP-HP-701, "Daily Instrumentation Source Checks", Version 1.3  
 NMP-HP-700, "Radiation Protection Instrumentation Program", Version 1.0  
 NMP-HP-718, "Operation and Calibration of the Canberra GEM-5 Gamma Exit Monitor",  
 Version 2.0  
 NMP-HP-709, "Calibration of the Small Article Monitor (SAM-12)", Version 1.0  
 62HI-OCB-092-0, "AMS-4 Operation and Calibration", Version 3.0  
 NMP-HP-719, "Operation and Calibration of the Canberra ARGOS-5AB Exit monitor", Version  
 3.1  
 62HI-OCB-002-0, "Portable HEPA Air Filtration Units and Vacuum Maintenance and Operation",  
 Version 10.1  
 62HI-OCB-080-0, "Shepherd Calibrator 89-400 Operation and Calibration," Ver 1.5  
 62HI-OCB-090-0, "SAM-9 Bag Waste Monitor and SAM-9/SAM-11 Small Articles Monitor  
 Operation and Calibration," Ver 4.6  
 57CP-CAL-005-1, "ARM System Calibration", Ver. 15.1  
 57SV-CAL-008-1, "ARM Calibration", Ver. 4.2

### Records and Data

Liquid Scintillator Daily QC Check Response Chart 02/14/2015-02/21/2015  
 NMP-HP-104, Daily Calibration of WBC System, 02/20/2015  
 NMP-HP-104, Efficiency Calibration Verification Counts, 10/20/14  
 NMP-HP-104, Efficiency Calibration Verification Counts, 10/09/13  
 Work Order #SNC567108, Rx Bldg Exh Vent Radiation Monitor Surveillance, 10/30/2014  
 Work Order #SNC567107, Refuel Floor Exh Vent Ris Surveillance, 10/30/2014  
 64CL-OCB-018-0, Detector Background and Source Checks, 02/23/15  
 Genie Quality Assurance, Hatch QA DET 3, 01-25/2015-2/24/2015  
 Genie Quality Assurance, Hatch QA DET 1, 01-25/2015-2/24/2015  
 62HI-OCB-107-0, RM-25 Calibration Data Sheet, 05/09/13, 05/07/14  
 NMP-HP-703 Data Sheet 1, Calibration Sheet RO, 07/09/13, 07/17/14,  
 62HI-OCB-090-0S, SAM Setup, 12/05/12,  
 62HI-OCB-090-0, SAM -11 Annual Calibration and Setup, 11/04/14  
 62HI-OCB-104-0, Tennelec Series 5 Calibration Data Sheet, 07/23/13  
 62HI-OCB-019-0, E-120 Calibration Form/Data Sheet, 10/16/13  
 62HI-OCB-092-0S, AMS-4 Instrument Parameters/Radial, 04/23/13, 04/09/14  
 62HI-OCB-192-0S, AMS-4 Instrument Parameters/In-Line head, 04/23/13, 7/12/13, 04/09/14  
 NMP-HP-718, GEM-5 Annual Calibration, serial # D21-N1843-1112-225, 10/12/12, 10/14/13,  
 11/27/14  
 NMP-HP-719, ARGOS 5AB Calibration Certificate, serial # D21-N1849, 12/20/13, 4/11/14,  
 12/19/14,  
 Model 89-400 Calibrator, Sources HNP 0244 & 0245, Calibration Record, Dated 09/07/2015  
 Work Order (WO) SNC512577, "57SV-CAL-008-01 Reactor Bldg Vent Radiation & ARM

System,” Dated 02/17/2014  
 WO SNC550298, “57SV-CAL-008-01 Reactor Bldg Vent Radiation & ARM System,” Dated 08/18/2014  
 WO # SNC567107, 57SV-D11-007-2 & 57SV-CAL-008-2 Refueling Floor Exhaust Vent Radiation Monitor Calibration, Dated 10/31/2014  
 U1 Reactor Building Vent Radiation Monitor Channel A Source Calibration, Dated 08/14/2014  
 U1 Reactor Building Vent Radiation Monitor Channel A Source Calibration, Dated 09/07/2012  
 U1 Reactor Building Vent Radiation Monitor Channel B Source Calibration, Dated 08/14/2014  
 U1 Reactor Building Vent Radiation Monitor Channel B Source Calibration, Dated 09/06/2012  
 U1 Post LOCA Monitor Channel A Source Calibration, Dated 02/11/2014  
 U1 Post LOCA Monitor Channel A Source Calibration, Dated 02/11/2014  
 U2 Reactor Building Vent Radiation Monitor Channel A Source Calibration, Dated 09/04/2014  
 U2 Reactor Building Vent Radiation Monitor Channel A Source Calibration, Dated 09/04/2014  
 U2 Reactor Building Vent Radiation Monitor Channel B Source Calibration, Dated 09/25/2012  
 Certificate of Calibration Standard Radionuclide Source #93777, Cs-137, Dated 06/21/2013  
 Certificate of Calibration Standard Radionuclide Source #49317-363, Cl-36, Dated 11/01/1994  
 Certificate of Calibration Standard Radionuclide Source #49344-363, Tc-99, Dated 11/01/1994  
 Radiation Monitor System Health Reports for 4th Quarter of 2013 and 1st, 2nd and 3rd Quarters

CRs 765469, 724305, 791900, 704179, 824645, 660001, 843888, 10003021  
 TE 766144, 851923, 853429, 661433, 907037

**Section 4AO1: Performance Indicators**

00AC-REG-005-0, “Preparation and Reporting of NRC PI Data”, Ver. 8.0  
 E. I. Hatch Nuclear Plant- Units 1 And 2, 2013 Annual Radioactive Effluent Release Report  
 Edwin I. Hatch Nuclear Plant, 2013 Annual Radiological Environmental Operating Report  
 Report, 2014 Dose Rate Alarms, 01/21/2015  
 Report, 2015 Dose Alarms, 01/21/2015  
 Gaseous Radioactive Waste Release Permit G-20150203-017-C  
 Liquid Radioactive Waste Release Permit L-20141127-012-C and L-20150225-034-B  
 L-20150220-017-B, Liquid Permit  
 G-20150211-023-C, Gas Permit  
 CRs 633992, 765886, 773402, 818634, 871331, 904538, 10006039

**Section 4OA2: Identification and Resolution of Problems**

CRs 902506, 902664, 10005250  
 CARs 249162, CAR 248781