



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

August 3, 2017

EA-17-120  
EA-17-124

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 05000321/2017002 AND 05000366/2017002; AND EXERCISE OF  
ENFORCEMENT DISCRETION

Dear Mr. Vineyard:

On June 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Edwin I. Hatch Nuclear Plant Units 1 and 2. On August 1, 2017, 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 one finding of very low safety significance (Green) in this report which involved a violation of NRC requirements. Further, inspectors documented a licensee-identified violation which was 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; and the NRC resident inspector at Hatch Nuclear Plant.

In addition, there are two items for which the NRC will exercise enforcement discretion. First, a violation involving the failure to maintain secondary containment during operations with the potential to drain the reactor vessel (OPDRV) which was identified during the Unit 2 refueling outage in February 2017. Specifically, Hatch conducted OPDRVs on three occasions during the refueling outage without establishing secondary containment operability, a condition that was a violation of Technical Specification (TS) 3.6.4.1, “Secondary Containment.” Inspectors verified compliance with the measures described in Enforcement Guidance Memorandum (EGM) 11-003, “Dispositioning Boiling Water Reactor Licensee Non-Compliance with Technical Specification Containment Requirements During Operations with a Potential for Draining the Reactor Vessel,” Revision 3, prior to and during these activities. Because the violation was identified during the discretion period described in EGM 11-003, the NRC is exercising

enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy and, therefore, will not issue enforcement action for this violation, subject to the license amendment request which was submitted on April 20, 2017.

Second, 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)." The noncompliances are associated with your implementation of the requirements and standards of your technical specifications, as well as 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." The problem is composed of three non-willful noncompliances, with the risk of each noncompliance determined to be less than red. The inspectors have screened the violation and determined that it warrants enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues, and Section 11.05.b of IMC 0305.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Joel T. Munday, Director  
Division of Reactor Projects

Docket Nos.: 50-321 and 50-366

License Nos.: DPR-57 and NPF-5

Enclosures:

IR 05000321/2017002, 05000366/2017002

w/Attachment: Supplemental Information

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT – NRC INTEGRATED INSPECTION REPORT 05000321/2017002 AND 05000366/2017002; AND EXERCISE OF ENFORCEMENT DISCRETION August 3, 2017

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**REGION II**

Docket Nos.: 50-321, 50-366, 72-036

License Nos.: DPR-57, NPF-5

Report No.: 05000321/2017002; and 05000366/2017002

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Edwin I. Hatch Nuclear Plant

Location: Baxley, GA

Dates: April 1 through June 30, 2017

Inspectors: D. Hardage, Senior Resident Inspector  
D. Retterer, Resident Inspector  
J. Montgomery, Senior Reactor Inspector (4OA3.5)  
P. Braaten, Reactor Inspector (4OA3.5)

Approved by: Joel T. Munday, Director  
Division of Reactor Projects

Enclosure

## SUMMARY

IR 05000321/2017002; and 05000366/2017002, April 1, 2017 through June 30, 2017; Edwin I. Hatch, Units 1 and 2, Maintenance Effectiveness.

The report covered a 3-month period of inspection by resident inspectors. There is one self-revealing violation documented in this report. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated April 29, 2015. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated November 1, 2016. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6. Documents reviewed by the inspectors which are not identified in the Report Details are identified in the List of Documents Reviewed section of the Attachment.

### Cornerstone: Mitigating Systems

- Green. A self-revealing, Green, non-cited violation (NCV) of Hatch Unit 1 Technical Specification 5.4 "Procedures," was identified when procedures to rejuvenate grease in the '1C' residual heat removal service water (RHRSSW) Pump breaker were not implemented resulting in failure of the pump to start. The violation was entered into the licensee's corrective action program as condition report (CR) 10263236 and the breaker was replaced to restore compliance.

Failure to rejuvenate the lubricating grease on 4kv DHP–VR breakers in accordance with vendor guidance was a performance deficiency. Specifically, the hardened grease prevented the '1C' RHRSSW pump breaker from closing resulting in the inoperability of the '1C' RHRSSW pump. The performance deficiency was associated with the Mitigating Systems cornerstone and was more than minor because it adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors screened this finding using IMC 0609, Appendix A, "The Significant Determination Process (SDP) For Findings At-Power," dated June 19, 2012. Because all four questions in Section A of Exhibit 2, "Mitigating Systems Screening Questions," were answered "no," the finding screened as Green. The inspectors determined that this finding did not have an associated cross cutting aspect because this finding is not reflective of current licensee performance. (Section 1R12)

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

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period at 97 percent rated thermal power (RTP). On April 7, operators shut down the unit to replace the three safety relief valve pilots. The unit returned to 95 percent RTP on April 11 then shut down on April 14 to repair a tube leak on the 12A feedwater heater. The unit started up on April 22 and operated at or near 100 percent RTP for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent RTP. On May 10, operators reduced power to 20 percent RTP due to loss of condenser vacuum. The unit returned to 100 percent RTP on May 14. On May 25, a recirculation pump runback reduced power to 79 percent RTP. The unit returned to 100 percent RTP later on May 25 and 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

###### Summer Readiness of Offsite and Alternate AC Power System:

The inspectors reviewed the licensee's procedures for operation and continued availability of offsite and onsite alternate AC power systems. The inspectors also reviewed the communications protocols between the transmission system operator and the licensee to verify that the appropriate information is exchanged when issues arise that could affect the offsite power system.

The licensee did not implement equipment or procedure changes that potentially affect operation or reliability of offsite and alternate AC power systems since the last time the inspectors assessed grid reliability. The inspectors reviewed the material condition of offsite and onsite alternate AC power systems (including switchyard and transformers) by performing a walkdown of the switchyard. The inspectors reviewed outstanding work orders and assessed corrective actions for degraded conditions that impacted plant risk or required compensatory actions.

##### 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 systems were correctly aligned by performing partial walkthroughs. The inspectors determined the

correct system lineup by reviewing plant procedures and drawings listed in the Attachment.

- Unit 1 high pressure coolant injection system following realignment from 12A feedwater heater force outage
- Unit 1 "A" diesel generator (DG) while the "B" DG was out of service for maintenance
- Unit 1 residual heat removal (RHR) system following realignment from torus cooling

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ)

a. Inspection Scope

Quarterly Inspection: The inspectors evaluated the adequacy of fire plans by comparing the fire plans to the defined hazards and defense-in-depth features specified in the fire protection program the following five fire areas.

- Unit 1 high pressure coolant injection pump room, fire area 1205Z
- Unit 1 control rod drive (CRD) pump room diagonal, fire area 1205C
- Unit 1 reactor building north and south CRD areas, fire areas 1203F and 1205F
- Unit 1 NE RHR and core spray room diagonal, fire area 1205B
- Unit 1 and 2, control room, fire area 0024C,D

The inspectors assessed the following:

- 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
- material condition and operational status of fire protection equipment

b. Findings

No findings were identified.

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

a. Inspection Scope

Resident Inspector Quarterly Review of Licensed Operator Requalification:

The inspectors observed an evaluated simulator scenario administered to an operating crew conducted in accordance with the licensee's accredited requalification training program.

The 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 of Licensed Operator Performance: The inspectors observed licensed operator performance in the main control room during Unit 1 shutdown to replace safety relief valves (SRV) pilot valves on April 7.

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

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.

- Unit 1, 'C' residual heat removal service water pump, pump start failure during surveillance test
- Unit 1, Analogue Transmitter Trip System (ATTS), loss of ATTS card output

b. Findings

Introduction: A self-revealing Green NCV of Hatch Unit 1 Technical Specification 5.4, "Procedures," was identified on February 4, 2017, when the '1C' RHRSP pump breaker failed to close due to grease hardening on the close roller. The licensee's failure to rejuvenate the lubricating grease on '1C' RHRSP pump 4kv DHP-VR breakers in accordance with vendor guidance was a performance deficiency.

Description: On February 4, 2017, at 02:50, while performing surveillance testing in accordance with 34SV-E11-004-1, "RHRSP Pump Operability," the '1C' RHRSP Pump did not start when control switch was turned to start. Operators declared the '1C' RHRSP pump inoperable and initiated CR 103265211. The licensee used Westinghouse DHP-VR breakers for safety related 4kv equipment including the '1C' RHRSP pump. Investigation performed by the licensee with the vendor concluded the cause of the failure of the breaker to close was the close roller would not rotate due to hardened grease. The breakers were supplied from the vendor with Molykote BR2 plus grease which was susceptible to hardening over time. The vendor recommended light machine oil to be added through the grooves of the closure mechanism to rejuvenate the existing lubricant and prevent hardening of the grease with a frequency of three years. The licensee preventive maintenance program procedure 52PM-R22-004 included general inspection and rejuvenation of the lubrication of the accessible areas that contain the Molykote BR2 plus grease. This procedure is performed with a scheduled frequency of once every six years. The breaker that failed had not had rejuvenation of the grease performed in over three years. On February 5, 2017, at 10:51 the '1C' RHRSP was returned to operable status following replacement of the breaker and operability testing. The licensee performed an extent of condition and rejuvenated the grease in an additional 23 breakers which had not been inspected in the previous three years.

Analysis: The licensee's failure to rejuvenate the lubricating grease on 4kv DHP-VR breakers in accordance with vendor guidance was a performance deficiency. Specifically, the hardened grease prevented the '1C' RHRSP pump breaker from closing resulting in the inoperability of the '1C' RHRSP pump. The performance deficiency was associated with the Mitigating Systems cornerstone and was more than minor because it adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors screened this finding using IMC 0609, Appendix A, "The Significant Determination Process (SDP) For Findings At-Power," dated June 19, 2012. Because all four questions in Section A of Exhibit 2, "Mitigating Systems Screening Questions," were answered "no," the finding screened as Green. The inspectors determined that this finding did not have an associated cross cutting aspect because this finding is not reflective of current licensee performance.

Enforcement: Hatch Unit 1 Technical Specification 5.4.1 requires, in part, that procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A,

February 1978. Regulatory Guide 1.33, Appendix A, section 9.a requires, in part, that maintenance of safety-related equipment is performed in accordance with written procedures appropriate to the circumstances. Contrary to the above, the licensee did not implement procedures to rejuvenate grease in the '1C' RHRSP Pump breaker in accordance with vendor recommendations. The licensee replaced the breaker for the '1C' RHRSP Pump to restore compliance on February 5, 2017. This violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement Policy. The violation was entered into the licensee's corrective action program as CR 10263236. (NCV 5000321/2017002-01; "Hardened grease prevented '1C' RHRSP pump breaker operation")

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

a. Inspection Scope

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

- Unit 1 and Unit 2, April 7- April 9, including protected equipment status reviews for Unit 1 SRV pilot replacement outage and Unit 2 routine maintenance.
- Unit 1 and Unit 2, April 15 – April 20, including protected equipment status reviews for Unit 1 12A feedwater heater outage and Unit 2 routine maintenance.
- Unit 1 and Unit 2, May 6 – May 12, including routine maintenance, ongoing switchyard work, emergent maintenance of the 1A and 1B DG output breakers and Unit 2 forced downpower due 2B steam jet air ejector malfunction and elevated condenser air in leakage.
- Unit 1 and Unit 2, June 24 – June 30, including routine maintenance, ongoing switchyard work, 1C instrument air compressor outage, 1B main control room air conditioner outage and dry cask load.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

Operability Determinations and Functionality Assessments Review: 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.

- CR10348128, Incorrect Piping Configuration on "2A", "1A", and "2B" DG Governor and Governor Servo Booster
- CR10352296, SRV nitrogen accumulator leakage
- CR10352307, Normal supply breaker from 1D SUT closing roller stuck
- CR10371467, High Pressure Cooling Injection (HPCI) pump suction piping pressurized
- CR10375140, Through wall leak on Unit 1 Div. II Pant Service Water piping to 1B DG

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

For the following plant modification listed below, the inspectors

- verified that the modifications did not affect the safety functions of important safety systems.
- confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems and components.
- verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition.
- 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.
- reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications.
  - TCC SNC852753, 'Dynamic pressure sensors require opening vents in the AST boundary'

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 five 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.

- SNC849923, Replace "H" SRV pilot, April 8, 2017
- SNC858599, Replace Turbine Stop Valve limit switch 1C71N006C, April 19, 2017
- SNC858740, Replace A, B, and D Intermediate Range Monitor (IRM) under vessel jumpers, April 21, 2017
- SNC856230, Replace Turbine Bypass Valve 3 hydraulic hose, April 22, 2017
- SNC855801, Lubricate breaker 1R22S005 frame 5, June 8, 2017

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.

**b. Findings**

No findings were identified.

**1R20 Refueling and Other Outage Activities (71111.20)****a. Inspection Scope**

For the Unit 1 outage to replace three SRV pilot valves from April 7 through April 9, 2017, and the Unit 1 outage to repair tube leaks in the 12A feedwater heater from April 14 through April 22, 2017, the inspectors evaluated the following outage activities:

- outage planning
- fatigue management
- shutdown, cooldown, heatup, and startup
- reactor coolant system instrumentation and electrical power configuration
- reactivity and inventory control
- 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.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the four surveillance tests listed below. The surveillance test was either observed directly or test results were reviewed to verify testing activities and results provide objective evidence that the affected equipment remain capable of performing their intended safety functions and maintain their operational readiness consistent with the facility's current licensing basis. The inspectors evaluated the test activities to assess for:

- preconditioning of equipment,
- appropriate acceptance criteria,
- calibration and appropriateness of measuring and test equipment,
- procedure adherence, and
- equipment alignment following completion of the surveillance.

Additionally, the inspectors reviewed a sample of significant surveillance testing problems documented in the licensee's corrective action program to verify the licensee was identifying and correcting any testing problems associated with surveillance testing.

Routine Surveillance Tests

- 34SV-R43-001-1, Diesel Generator 1A Monthly Test, Ver. 24.3
- 34SV-E41-002-1, HPCI Pump Operability, Ver. 31.6
- 34SV-T48-002-2, Suppression Chamber to Drywell Vacuum Breaker Operability and Containment Purge/Vent Valve Position Check, Ver. 5.7

### In-Service Tests (IST)

- 34SV-SUV-008-2, Primary Containment Isolation Valve Operability, Ver. 15.7
- b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

### 1EP6 Drill Evaluation (71114.06)

- a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on April 25, 2017. The inspectors observed licensee activities in the simulator and technical support center to evaluate implementation of the emergency plan, including event classification, notification, dose assessment, and protective action recommendations. The inspectors noted this drill was a training drill to practice the implementation of changes to the emergency director roles and other emergency plan changes and not used by the licensee for input into performance indicators. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program.

- 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 April 2016 and March 2017 to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data.

Cornerstone: Barrier Integrity

- reactor coolant system leak rate (both units)
- reactor coolant system specific activity (both units)

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

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

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed issues entered in the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on human performance trending, but also considered the results of inspector daily condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the 6-month period of January 2017 through June 2017, although some examples extended beyond those dates when the scope of the trend warranted. The inspectors compared their results with the licensee's analysis of trends. Additionally, the inspectors reviewed the adequacy of corrective actions associated with a sample of the issues identified in the licensee's trend reports. The inspectors also reviewed corrective action documents that were processed by the licensee to identify potential adverse trends in the condition of structures, systems, and/or components as evidenced by acceptance of long-standing non-conforming or degraded conditions.

b. Findings and Observations

No findings were identified. However, the inspectors noted there were eleven condition reports related to human performance issues in operations department during the spring 2017 Unit 2 refueling outage. The issues included operators performing procedures steps on the wrong unit, operators crossing radiation control boundaries without the required briefings, several errors executing clearances, and loss of configuration control during local leak rate testing. These errors resulted in the inoperability of Technical Specification (TS) equipment on the non-outage unit including the 1A EDG and Unit 1 secondary containment.

The licensee initiated CR 10354171 to document human performance related events and performed a common cause analysis which was document in corrective action

report (CAR) 269473. This analysis noted inadequate application of rigorous controls, inadequate risk recognition, and ineffective use of human performance tools as causes for the events. Inspectors noted corrective actions prescribed by this analysis being implemented including a “pull the standard” campaign and operations procedure reviews. Additionally, operations continuing training cycle 17-3 incorporated training on human performance tool usage for all operators and simulator training scenarios were modified to focus on attention to detail, risk recognition and human performance tool usage. Inspectors continue to monitor this issue.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of condition report CR 10334195, Decreasing temperatures on 1L SRV pilot stage. 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

b. Findings

No findings were identified. On February 21, 2017, reactor operators noted decreasing temperatures on ‘1L’ SRV pilot and initiated CR 10334195. The decreasing temperatures noted were indications of SRV pilot valve seat leakage. The SRVs were three stage pilot operated valves. Leakage of the pilots can be an indication that the safety valve will open at a lower pressure than the nominal desired setpoint. This does not affect the safety function of opening to relieve an overpressure condition but lifting of the valve at lower pressure (during normal at power operation) would cause an undesired transient and force an immediate unit shutdown. The licensee declared the valve operable, noted the indications did not meet the licensee's criteria for entering the abnormal procedure for SRV pilot valve seat leakage, and initiated CAR 268862 to disposition the issue. Inspectors verified the magnitude of temperature changes was less than the entry conditions for a malfunctioning SRV (>30 degree pilot decrease concurrent with >5 degree second stage decrease). Five additional condition reports were generated by operations between February 22 and March 10, 2017, to document temperature changes on the ‘L’ SRV pilot including CR 10336636 which documented entry in the abnormal procedure and power reduction to 96.9 percent RTP for ‘L’ SRV pilot leakage. These additional condition reports were all closed to CAR 268862. The licensee shutdown Unit 1 down on April 7, 2017, and replaced the ‘L’ SRV and two other SRV pilot assemblies.

The resident inspectors reviewed past issues with SRV pilots and noted approximately one month after installation in February 2016, three pilots (including 'L') began leaking and Unit 1 was shutdown to replace the SRV pilots. CAR 264544 evaluated the leakage and determined the leakage was due to too broad tolerances in OEM acceptance criteria which allowed alignment issues due to stack up during assembly. However the three SRV pilots were replaced in 2016 prior to completion of this evaluation. In January 2017, 'L' SRV pilot once again began leaking (CR 10320979) and Unit 1 was shutdown to replace SRV pilot valves. CAR 268346 documents the 'L' SRV pilot and two other pilots which were replaced in January 2017 had the tightened tolerances recommended from the earlier evaluation (CAR 264544) and recommended no additional corrective actions.

The leakage documented in CR 10334195 were on SRV pilots which had the actions of CAR 264544 implemented. These actions did not prevent SRV pilot leakage. CAR 268862 dispositioned the pilot replacements installed in April 2017 be set to the high end of the set point tolerance (1158-1161 psig). Additionally, the number of certification lifts was reduced from three to two. The residents discussed these actions with engineering and plant management. The setting of the pilots at the high end of the band is considered a temporary corrective action. The licensee is monitoring dynamic steam line pressures in an effort to gain insight to long term corrective actions. Unit 1 restarted April 11 and currently has no indication of SRV pilot leakage. The residents continue to monitor leak by of SRV pilot assemblies.

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

.1 (CLOSED) LER 05000366/2017-001-00 Performance of Operations with Potential to Drain the Reactor Vessel (OPDRV) Without Secondary Containment

a. Inspection Scope

The inspectors reviewed this LER for potential performance deficiencies and/or violations of regulatory requirements. In February 2017, during the Unit 2 refueling outage, operations with the potential to drain the reactor vessel (OPDRV) activities were performed while in Mode 5 (Refueling Mode) contrary to Technical Specification (TS) 3.6.4.1. Enforcement Guidance Memorandum (EGM) 11-003, Revision 3, provided required interim actions which were incorporated into procedure 31GO-OPS-025-0 "Operations with the Potential to Drain the Reactor Vessel." This procedure was used during the OPDRV activities for the Unit 2 refueling outage. LER 05000366/2017-001-00 is closed.

b. Findings

Description: The inspectors reviewed the plant's implementation of Enforcement Guidance Memorandum 11-003 during maintenance activities which had the potential to drain the reactor vessel during the Unit 2 refueling outage. The activities were:

- Local power range monitors removal and replacement February 10, 2017;
- Control rod drive insert / recouple activity February 11, 2017; and
- Hydraulic Control Unit Venting February 12-13, 2017.

These activities took place without secondary containment being operable. Inspectors verified compliance with the guidelines of Enforcement Guidance Memorandum 11-003 prior to and during these activities. This condition was documented in the licensee's corrective action program as CR 10329405, 10329857, 10330152, and 10330153.

Enforcement: Unit 2 TS 3.6.4.1 required, in part, that activities that had the potential to drain the reactor vessel be conducted only with secondary containment operable. Contrary to that requirement, the licensee conducted activities that could cause the reactor vessel to drain while secondary containment was inoperable. The NRC is exercising enforcement discretion (Enforcement Action (EA)-17-124) in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy because the violation was identified during the discretion period described in Enforcement Guidance Memorandum 11-003. Therefore, the NRC will not issue enforcement action for this violation, subject to the license amendment request which was submitted on April 20, 2017.

.2 (CLOSED) LER 05000321/2017-002-00 High Pressure Coolant Injection System Declared Inoperable Due to Degraded Inverter

a. Inspection Scope

The inspectors reviewed this LER for potential performance deficiencies and/or violations of regulatory requirements. Additionally, discussions were held with Operations, Engineering and Licensing staff members to understand the details surrounding this issue. This condition was documented in the licensee's corrective action program as CR 10336918. LER 05000321/2017-002 is closed.

b. Findings

No findings or violations of NRC requirements were identified.

.3 (CLOSED) LER 05000321, 366/2017-003-00 Inoperable Secondary Containment Due to Incorrect Penetration Flange Installation

a. Inspection Scope

The inspectors reviewed this LER for potential performance deficiencies and/or violations of regulatory requirements. Additionally, discussions were held with Operations, Engineering and Licensing staff members to understand the details surrounding this issue. This condition was documented in the licensee's corrective action program as CR 10332592. LER 05000321, 366/2017-003 is closed.

b. Findings

The enforcement aspects of this finding are discussed in Section 4OA7 of this report.

.4 (CLOSED) LER 05000366/2017-002-00 Emergency Diesel Generator Start Due to Inadvertent Electrical Bus De-Energization

a. Inspection Scope

The inspectors reviewed this LER for potential performance deficiencies and/or violations of regulatory requirements. Additionally, discussions were held with Operations, Engineering and Licensing staff members to understand the details surrounding this issue. This condition was documented in the licensee's corrective action program as CR 10332134. LER 05000366/2017-002 is closed.

b. Findings

10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to this requirement, activities prescribed in licensee procedure 52IT-MEL-015-2, "Trip Test of Start Up Transformer 2D Protective Relays," were not accomplished when a movement operated contact (MOC) switch adapter was installed during the performance of 2D SAT transformer testing without procedural guidance. As a result, when the normal supply breaker for the 2E 4160V bus was closed with the breaker in test position and the MOC adapter switch installed, the alternate supply which was feeding the 2E 4KV bus received a trip signal and opened, deenergizing the 2E 4160V bus. The alternate supply breaker re-closed within one second reenergizing the bus, the 2A Diesel auto started but did not tie as the bus was reenergized by the time the EDG was at speed and voltage. The licensee captured this issue in their corrective action program as CR 10332134 and reperformed the testing satisfactorily. Although the safety related 2E 4160V bus was deenergized for approximately one second, the availability of the bus to respond to an initiating event to prevent undesired consequences was not adversely impacted because the bus was reenergized from a qualified offsite power source and the EDG started as expected. Therefore, this is being treated as a minor violation. This failure to comply with 10 CFR 50 Appendix B, Criterion V constitutes a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

.5 (CLOSED) Licensee Event Report (LER) 05000321, 366/2015-001-00 and 2015-001-01: Unanalyzed Conditions for a Postulated Fire Identified During NFPA 805 Transition

a. Inspection Scope

On August 3, 2015, and October 6, 2015, the licensee submitted LERs documenting the discovery of conditions of non-compliance with the site's fire protection program (FPP). These conditions could prevent operators from achieving and maintaining safe shutdown (SSD) of the plant, in the case of a postulated fire.

The inspectors performed a detailed review of the information related to these LERs. Inspectors reviewed documents, and discussed the events with plant personnel to gain an understanding of the events. The inspectors assessed the licensee's compensatory measures and corrective actions to determine if they were adequate.

b. Findings

Problem Associated with the Failure to Implement Requirements and Standards of the Fire Protection Program

Multiple issues associated with implementation of the Fire Protection Program were identified by the licensee. In accordance with IMC 0612, Appendix B, "Issue Screening" and Section 1.3.5, "Documenting Related Violations" of the NRC Enforcement Manual, the NRC evaluated these issues and determined that they would be dispositioned as a group of related programmatic noncompliances associated with a problem in your implementation of the requirements and standards of 10 CFR Part 50.48(b)(1), and Hatch Renewed Operating License Condition 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively.

On August 3, 2015, the licensee submitted LER 2015-001-00, which documented discovery of cable routing issues and postulated fire-induced circuit failures that could prevent operation or cause mal-operation of equipment required to achieve SSD in the event of a fire. These conditions were identified during the licensee's transition to National Fire Protection Association Standard 805 (NFPA 805). On October 6, 2015, the licensee submitted a revision to the original LER, detailing additional cases of cable routing issues.

Issues Associated with the Problem

1. Noncompliance for Failure to Protect Redundant Trains of Safe Shutdown Equipment

Introduction: The inspectors identified a noncompliance with 10 CFR Part 50, Appendix R, Section III.G.2 for the licensee's failure to protect one of the redundant trains of equipment needed to achieve post-fire SSD from fire damage. Specifically, the licensee failed to use one of the means described in Section III.G.2 to ensure that one of the redundant trains of equipment necessary to achieve and maintain hot shutdown conditions was protected from fire damage.

Description: During the transition to NFPA 805, the licensee identified multiple instances of cables for equipment required to achieve SSD not meeting the separation requirements of the current licensing basis. The licensee determined that this condition existed for 16 fire areas across both units. The licensee characterized these issues as variance(s) from deterministic requirements (VFDRs).

It was discovered that, due to lack of separation of components and associated circuits, fires in certain areas could potentially lead to conditions that adversely impact the ability to achieve and maintain SSD. These conditions include, but are not limited to, loss of RCS injection from HPCI, low pressure cooling injection (LPCI), or Reactor Core Isolation Cooling, a loss of AC power to credited electrical buses, and a loss of credited instruments needed for process monitoring. The licensee determined that these conditions were caused by methodology weaknesses in the site's fire safe shutdown analysis. Upon discovery, the licensee implemented compensatory measures in the form of posting a roving fire watch in fire areas of concern. The licensee also committed to restore compliance by design changes and licensing basis changes.

2. Noncompliance for Failure to Provide Alternative Shutdown Capability for Certain Fire Areas

Introduction: The inspectors identified a noncompliance with 10 CFR Part 50, Appendix R, Section III.G.3 for the licensee's failure to provide alternative shutdown capability where the protection of systems whose function is required for how shutdown does not satisfy the requirement of Section III.G.2. Specifically, the licensee failed to provide alternative shutdown capability to assure one train of systems necessary to achieve and maintain hot shutdown is free of fire damage.

Description: During the transition to NFPA 805, the licensee identified multiple instances of cables for equipment required to achieve SSD not meeting the separation requirements of the current licensing basis. The licensee determined that this condition existed for one fire area that could affect both units. The licensee characterized these issues as variance(s) from deterministic requirements (VFDRs).

It was discovered that, due to lack of separation of components and associated circuits, fires in fire area (FA) 0024 could potentially lead to conditions that adversely impact the ability to achieve and maintain SSD. These conditions include loss of reactor coolant system (RCS) injection from LPCI. The licensee determined that these conditions were caused by methodology weaknesses in the site's fire safe shutdown analysis. Upon discovery, the licensee implemented compensatory measures in the form of posting a roving fire watch in fire areas of concern. The licensee also committed to restore compliance by design changes and licensing basis changes.

3. Noncompliance for Providing Inadequate Procedural Guidance for Post-Fire Safe Shutdown

Introduction: The inspectors identified a noncompliance with Hatch Technical Specification 5.4.1.a for the licensee's failure to provide adequate procedural guidance in post-fire safe shutdown abnormal operating procedure of Abnormal Operating Procedure (AOP) 34AB-X43-001-1, "Fire Procedure." Specifically AOP 34AB-X43-001-1 directs operators to perform manual actions that may not be adequate to reopen a credited valve that has spuriously closed.

Description: During the transition to NFPA 805, the licensee identified multiple instances of cables for equipment required to achieve SSD not meeting the separation requirements of the current licensing basis. The licensee determined that this condition existed for FA 1105, East Cableway Foyer.

It was discovered that cables were identified in the current Safe Shutdown Analysis Report (SSAR) for HPCI Steam Supply Isolation motor operated valve 1E41-F002. These cables were dispositioned by taking an Operator Manual Action (OMA) to open links BB-49 and BB-57 in panel 1H11-P622. Further evaluation showed that the OMA would prevent the valve from spuriously closing, but it would not re-open the valve after a spurious closure, due to the power supply for this valve being unavailable due to fire impacts. The licensee determined that these conditions were caused by methodology weaknesses in the site's fire safe shutdown analysis. Upon discovery, the licensee implemented compensatory measures in the form of posting a roving fire watch in fire areas of concern, and revised the affected procedure.

### Analysis of the Problem

Failure to adequately implement the requirements contained in 10 CFR Part 50.48(b)(1), and Hatch Renewed Operating License Condition 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 was a performance deficiency. This finding was more than minor because it was associated with the reactor safety mitigating system cornerstone attribute of protection against external events (i.e., fire). Because this issue relates to fire protection and this non-compliance was identified 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), inspectors reviewed qualitative and quantitative risk analyses performed by the licensee. These risk evaluations took ignition source and target information from the ongoing Hatch fire PRA to demonstrate that the significance of the non-compliances were less-than-Red (i.e.  $\Delta$  core damage frequency (CDF) less than 1E-4/year). Inspectors determined that cables associated with some of the VFDRs were not located in the zone of influence (ZOI) of any credible ignition source. For cables that were located in the ZOI of a credible ignition source, inspectors were able to perform a calculation to determine the change in conditional core damage probability (CCDP), based on the postulated fire-affected equipment not being available. Based on these screenings, inspectors determined that the significance of this non-compliance was less-than-Red. A bounding risk assessment was performed by a regional SRA which included the review of the licensee and inspector's risk evaluations and confirmed the  $\Delta$ CDF risk increase due to this condition was less than 1E-4, and therefore less than RED.

The inspectors determined that no cross-cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

### Enforcement of the Problem

10 CFR Part 50.48(b)(1) requires 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, III.J, and III.O.

- Section III.G.2 requires, in part, that where cables and equipment of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located in the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:
  - separation of cables and equipment by a fire barrier having a 3-hour rating; or
  - separation of cables and equipment by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. Fire detection and automatic fire suppression shall be installed in the fire area; or
  - enclosure of cables and equipment of one redundant train in a fire barrier having a 1-hour fire rating. Fire detection and automatic suppression shall be installed in the fire area.

- Section III.G.3 requires, in part, that alternative shutdown capability be provided where the protection of systems whose function is required for how shutdown does not satisfy the requirement of Section III.G.2.

Additionally, Hatch Technical Specifications 5.4.1.a, "Procedures" for Unit 1 states that written procedures shall be established, implemented, and maintained covering activities listed in NRC Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Item 6.v of Appendix A lists Plant Fires as an activity that requires written procedures.

Contrary to the above, the licensee failed to meet the requirements of its documented fire protection program since initial plant licensing, in that:

- The licensee did not meet the requirements of 10 CFR Part 50, Appendix R, Section III.G.2 in that the licensee did not ensure that one of the redundant trains was free of fire damage by providing one of the following means stated in Section III.G.2.
- The licensee did not ensure alternative shutdown capability be available for 2 fire areas where the guidelines for ensuring one redundant train for safe shutdown be free of fire damage, as required by 10 CFR Part 50, Appendix R, Section III.G.3.
- The licensee failed to provide adequate procedural guidance to ensure fire safe shutdown due to a fire in FA 1105.

CRs generated for these issues are listed in the Documents Reviewed section. 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 (EA-17-120) 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. Specifically, this issue was identified and will be addressed during the licensee's transition to NFPA 805, it 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).

#### 4OA5 Other Activities

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

###### a. Inspection Scope

The inspectors performed a walkdown of the onsite ISFSI and monitored the activities associated with the dry fuel storage campaign completed on June 23, 2017. The inspectors reviewed changes made to the ISFSI programs and procedures, including associated 10 CFR 72.48, "Changes, Tests, and Experiments," screens and evaluations to verify that changes made were consistent with the license or certificate of compliance. The inspectors reviewed records to verify that the licensee recorded and maintained the location of each fuel assembly placed in the ISFSI. The inspectors also reviewed surveillance records to verify that daily surveillance requirements were performed as required by technical specifications.

b. Findings

No findings were identified.

**4OA6 Meetings, Including Exit**

On August 1, 2017, the resident inspectors presented the inspection results to David Vineyard and other members of the licensee's staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

**4OA7 Licensee-Identified Violations**

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

- TS 3.6.4.1 requires secondary containment be operable in Mode 1 and during movements of irradiated fuel assemblies in the secondary containment. Contrary to the above, on February 8 at 1035, with Unit 1 operating at 100 percent RTP and Unit 2 conducting refueling operations, secondary containment was made inoperable when Unit 2 reactor building containment was breached for a scheduled refueling outage and a configuration control error on the Unit 2 standby gas treatment system provided a uncontrolled opening into the secondary containment for the Unit 1 reactor building and the common refueling floor. A temporary blind flange had been incorrectly installed on the upstream side vice downstream side of the Unit 2 standby gas treatment inlet isolation valve when the valve had been removed from the system for testing. This configuration rendered secondary containment for the Unit 1 reactor building and the common refueling floor inoperable. A senior reactor operator performing a plant tour noted the incorrect flange configuration and at 2017 on February 17, the blind flange was moved to the downstream side of the Unit 2 standby gas treatment inlet isolation valve to restore compliance. Inspectors screened the finding in accordance with IMC 609 Appendix A "The Significance Determination Process (SDP) for Findings at-Power." The finding screened as very low safety significance (Green) because the questions in Appendix A Exhibit 3 for Control Room, Auxiliary, Reactor, or Spent Fuel Pool Building, were answered "no". This issue was documented in the licensee's corrective action program as CR 10332592.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

B. Anderson, Radiation Protection Manager  
J. Bailey, Licensing Engineer  
P. Bailey, SNC IVVI Level III  
H. Betsill, Emergency Preparedness Specialist  
G. Brinson, Maintenance Director  
J. Collins, Licensing Supervisor  
B. Deen, Training Director  
B. Duvall, Chemistry Manager  
A. Elliot, BWRVIP Owner  
B. Hulett, Engineering Director  
G. Johnson, Regulatory Affairs Manager  
R. Lewis, Operations Support Manager  
K. Long, Operations Director  
B. Mathews, Welding & Repair/Replacement Coordinator  
A. Manning, Work Management Director  
J. Merritt, Security Manager  
R. Outler, Emergency Preparedness Supervisor  
C. Rush, Nuclear Oversight Manager  
R. Spring, Plant Manager  
M. Todd, Engineering Programs Supervisor  
M. Torrance, Design Engineering Manager  
D. Vineyard, Site Vice President  
B. Wainwright, Operations Training Manager  
K. White, SNC ISI Level III

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened and Closed

05000321/2017002-01 NCV Hardened grease prevents 1RHRSP pump breaker operation (Section 1R12)

### Closed

05000366/2017-001-00 LER Performance of Operations with Potential to Drain the Reactor Vessel (OPDRV) Without Secondary Containment (Section 4OA3.1)

05000321/2017-002-00 LER High Pressure Coolant Injection System Declared Inoperable Due to Degraded Invertor (Section 4OA3.2)

05000321, 366/2017-003-00 LER Inoperable Secondary Containment Due to incorrect Penetration Flange Installation (Section 4OA3.3)

05000366/2017-002-00 LER Emergency Diesel Generator Start Due to Inadvertent Electrical Bus De- Energization (Section 4OA3.4)

05000321, 366/2015-001-00 LER and 2015-001-001 Unanalyzed Condition for a Postulated Fire Identified During NFPA 805 Transition Energization (Section 4OA3.5)

## LIST OF DOCUMENTS REVIEWED

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

#### Procedures

34AB-S11-001-0, "Operation with Degraded System Voltage," Ver. 4.0  
NMP-OS-020, "Station Response to Southern Company System Alert Conditions," Ver. 1.2

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

#### Procedures

34SO-E11-010-1, "Residual Heat Removal System," Ver. 44.13  
34SO-E41-001-1, "HPCI System," Ver. 29.2  
34SO-R43-001-1, "Diesel Generator Standby AC System," Ver. 27.4

#### Drawings

H260220, H26021, H11631

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

#### Procedures

E.I. Hatch Fire Protection Fire Hazards Analysis  
52SV-FPX-001-0, "Fire Extinguisher Inspection," Ver. 3.4

#### Drawings

A-43965 sheet 55A/B, Unit 1 HPCI Pump Room Reactor Bldg. el. Below 130' 0"  
A-43965 sheet 54A/B, Unit 1 CRD and DRW Sump Room Reactor Bldg. el. below 130' 0"  
A-43965 Sheet 53A/B, Unit 1 NE RHR & Core Spray Room Reactor Bldg. el. Below 130' 0"  
A-43965 Sheet 58A/B, Unit 1 South CRD area Reactor Bldg. elevation 130' 0"  
A-43965 Sheet 59A/B, Unit 1 North CRD area Reactor Bldg. elevation 130' 0"  
A-43965 Sheet 48A/B, Unit 1 and 2 Control Room Control Bldg. elevation 164' 0"

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

Drill Scenario: LT-SG-50464

#### Procedures

34GO-OPS-013-1, "Normal Plant Shutdown," Ver. 31.2  
34GO-OPS-065-0, "Control Rod Movement," Ver. 13.1  
34SO-R22-001-1, "4160 VAC System," Ver. 23.3  
34AB-P41-001-2, "Loss of Plant Service Water," Ver. 13.5  
34AB-R23-001-2, "Loss of 600 Volt Emergency Bus," Ver. 4.0

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

E11 Maintenance Rule (MR) Scoping Manual Documents  
E11 MR Performance Criteria  
System Health Report –A70 System –2nd quarter 2017  
A70 Maintenance Rule (MR) Scoping Manual Documents  
A70 MR Performance Criteria  
NMP-ES-002, "System Monitoring and Health Reporting," Ver. 21.1  
CR10349214, CR 10326511, CR10377758 CAR268971, CAR269380

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

Equipment Out of Service calculations 4/2/17-4/14/17  
 Equipment Out of Service calculations 4/15/17-4/28/17  
 Equipment Out of Service calculations 4/29/17-5/12/17  
 Equipment Out of Service calculations 6/24/16-7/7/17

**Procedures**

NMP-OS-010-002, "Hatch protected equipment logs," Ver. 11.0  
 31GO-OPS-024-0, "Outage Safety Assessment," Ver. 4.1

**Section 1R15: Operability Evaluations****Procedures**

NMP-AD-012, "Operability Determinations and Functional Assessments," Ver. 13.1  
 52PM-R43-001-0, "Diesel Generator Major Inspection," Ver. 8.1  
 42SV-TET-001-1, "Primary Containment Type B and Type C Leak Rate Testing," Ver. 29.1  
 NMP-ES-038-004, "Water Hammer Event Response Instruction," Ver. 1.0

**Other**

CAR 269254  
 SNC853165  
 H16299

**Section 1R18: Plant Modifications**

NMP-AD-010, "10 CFR 50.59 Screening/Evaluation," Ver. 13.1  
 NMP-AD-008, "Applicability Determination," Ver. 20.0

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

52GM-B21-006-0, "Main Steam Three Stage SRV Maintenance," Ver. 5.0  
 NMP-MA-014-001, "Post Maintenance Testing Guidance," Ver. 4.2  
 57CP-C51-002-0, "IRM Detector Testing," Ver. 3.3  
 34SV-N30-003-2, "Main Turbine Bypass Valve Monthly Surveillance Test," Ver. 10.2  
 52SV-N32-001-1, "Main Turbine Stop Valve SVRP Limit Switch Inspection," Ver. 4.1  
 34SV-C71-001-1, "Turbine Stop Valve Instrument Functional Test," Ver. 9.3  
 34SV-R43-001-1, "Diesel Generator 1A Monthly Test," Ver. 24.3

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

Operating Logs  
 34GO-OPS-001-1, "Plant Startup," Ver. 43.2  
 34GO-OPS-013-1, "Normal Plant Shutdown," Ver. 31.2  
 34GO-OPS-065-0, "Control Rod Movement," Ver. 13.1  
 34SO-C11-005-1, "Control Rod Drive Hydraulic System," Ver. 31.6

**Section 1EP6: Drill Evaluation**

EP Exercise Narrative and Timeline for drill conducted April 25, 2017  
 Emergency Notification Forms dated April 25, 2017

**Section 4OA1: Performance Indicator Verification**

NMP-AD-029, "Preparation and Reporting of Regulatory Assessment PI Data," Ver. 1.0

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

### Condition Reports

CR 10327169, "Error during Tagout"  
 CR 10329596, "Valve removed with Red Tag hanging"  
 CR 10329725, "ODCM violation"  
 CR 10330588, "Sections of 34SV-C41-003-2 had to be reperformed"  
 CR 10330588, "Inadequate radiological behaviors"  
 CR 10332592, "SBGT suction damper blank installed in error"  
 CR 10333022, "1A EDG auto start lockout/CNTL at engine alarm"  
 CR 10334256, "Component found out of position"  
 CR 10335209, "LLRT valve mispositioned"

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

31GO-OPS-025-0, "Operations with the Potential to Drain the Reactor Vessel," Ver. 2.9

### Drawings

H-40178, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Cont. Bldg. El. 130'-0" TA-TE & T10-T13, Rev. 15.0  
 H-40179, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Control Bldg. El. 130'-0" TE-TI & T10-T13, Rev. 9.0  
 H-40182, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Sections & Details Cont. Bldg. El. 130'-0", Rev. 8.0  
 H-13216, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout Control Building El. 147'-0" TA-TH & T11-T13 Plan, Rev. 22.0  
 H-13223, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout Control Building El. 112'-0" to 147'-0" Sections Sheet 6, Rev. 12  
 H-13226, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout Control Building El. 112'-0" to 147'-0" Sections Sheet 9, Rev. 15  
 H-13222, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout Control Building El. 112'-0" to 147'-0" Sections Sheet 5, Rev. 16  
 H-40197, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways East Cableway El. 130'-0", Rev. 12.0  
 H-40199, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways East Cableway – Sections - El. 130'-0" Sh. 1 of 2, Rev. 9.0  
 H-13209, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout East Cableway El. 130'-0" Cols TA-TB & T4-T14 - Plan, Rev. 13  
 H-13210, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout East Cableway El. 130'-0" - Sections – Sheet 1, Rev. 12  
 H-13211, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout East Cableway El. 130'-0" - Sections – Sheet 12 Rev. 9  
 H-13222, Edwin I. Hatch Nuclear Plant Unit No. 1 Cable Tray Layout Control Building El. 112'-0" to 147'0' - Sections – Sheet 5, Rev. 16  
 H-17441, Edwin I. Hatch Nuclear Plant Unit No. 1 Template Details and Conduit Arrangement Motor Control Centers Sheet 1 of 5, Rev. 14  
 H-42848, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building - El. 130'-0" S.W. Section of S.E. Quadrant, Rev. 4.0  
 H-42851, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building - El. 130'-0" S.E. Section of S.E. Quadrant, Rev. 4.0

- H-42852, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" S.W. Section of S.W. Quadrant, Rev. 6.0
- H-42839, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" S.E. Section of N.E. Quadrant, Rev. 8.0
- H-42845, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.E. Section of S.E. Quadrant, Rev. 7.0
- H-42846, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.W. Section of S.E. Quadrant, Rev. 6
- H-16025, Edwin I. Hatch Nuclear Plant Unit No. 1 Equipment Locations Reactor & Radwaste  
Bldg. Below EI. 130'-0", Rev. 10.0
- H-40174, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways N.W. Diagonal EI.  
108'-0", Rev. 4
- H-42842, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.W. Section of N.W. Quadrant, Rev. 6.0
- H-42841, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.E. Section of N.W. Quadrant, Rev. 6.0
- H-42838, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.W. Section of N.E. Quadrant, Rev. 4
- H-42837, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
EI. 130'-0" N.E. Section of N.E. Quadrant, Rev. 7.0
- H-40202, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
N.W. Below EI. 130'-0", Rev. 7.0
- H-40204, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
S.W. Below EI. 130'-0", Rev. 7.0
- H-40201, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Reactor Building -  
N.E. Below EI. 130'-0", Rev. 9.0
- H-40146, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Diesel Generator  
Building (DSL 1C)", Rev. 8.0
- H-40145, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Diesel Generator  
Building (DSL 1B)", Rev. 8.0
- H-40144, Edwin I. Hatch Nuclear Plant Unit No. 1 Appendix "R" Raceways Diesel Generator  
Building (DSL 1A)", Rev. 4
- H-24614, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Control Building EI. 164'-0" Column TE-TI, T11-T13, Rev. 11
- H-24611, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Control Building EI. 147'-0" Column TA-TH, T11-T13, Rev. 9.0
- H-24623, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Reactor Building North EI. 130'-0", Rev. 13.0
- H-24627, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Reactor Building North EI. 158'-0", Rev. 7.0
- H-24616, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Reactor Building North Below EI. 130'-0", Rev. 4
- H-24622, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Fire Zones and Safe  
Shutdown Raceway Plan Reactor Building North Below EI. 130'-0", Rev. 6
- H-27296, Edwin I. Hatch Nuclear Plant Unit No. 2 Electrical Tray Layout & Supports Reactor  
Bldg. West EI. 158'-0", Rev. 13.0
- H-24635, Edwin I. Hatch Nuclear Plant Unit No. 2 10 CFR 50 Appendix R Safe Shutdown  
Raceway Plan Diesel Generator Building, Rev. 6

**Condition Reports**

10079009, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ002  
10079019, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ003  
10079022, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ004  
10079025, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ005  
10084753, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ006  
10084757, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ007  
10088142, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ009  
10108999, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ013  
10113740, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ016  
10113745, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ017  
10115432, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ022  
10115436, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ027  
10115444, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ030  
10115446, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ028  
10115473, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ025  
10118312, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ018  
10118328, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ019  
10118333, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ033  
10118338, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ034  
10118345, Unanalyzed Condition Discovered during NFPA 805 Transition Issue –SEQ020

**Section 4OA5: Other Activities**

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Fuel Assembly Certification Datasheets 2017 Loading Campaign

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Fuel Movement Sheets 2017 Dry Storage – MPC-504 Loading