



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II**

245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

February 7, 2017

Mr. B. Keith Taber, Vice President
Southern Nuclear Operating Company, Inc.
Vogtle Electric Generating Plant
7821 River Road
Waynesboro, GA 30830

**SUBJECT: VOGTLE ELECTRIC GENERATING PLANT – NRC INTEGRATED INSPECTION
REPORT 05000424/2016004 AND 05000425/2016004 AND FOLLOWUP
ASSESSMENT LETTER**

Dear Mr. Taber:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 1 and 2. On February 2, 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 was also a violation of regulatory requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy. If you contest the violation or significance of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the 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 Vogtle.

If you disagree with the cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC resident inspector at the Vogtle Electric Generating Plant.

After reviewing Vogtle Units 1 and 2 performance in addressing a greater-than-green finding, the NRC concluded your actions met the objectives of Inspection Procedure 95001, "Supplemental Inspection Response to Action Matrix Column 2 Inputs," (reference ADAMS Accession number ML16178A018). Therefore, in accordance with the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this greater-than-green finding was only considered in assessing plant performance for a total of four quarters. As a result, the NRC determined the performance at Vogtle Units 1 and 2 to be in the Licensee Response Column of the ROP Action Matrix as of January 1, 2017.

B. Taber

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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 R. Sandal, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos.: 50-424, 50-425
License Nos.: NPF-68 and NPF-81

Enclosures:
IR 05000424/2016004; 05000425/2016004
w/Attachment: Supplemental Information

cc: Distribution via ListServ

B. Taber

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B. Taber

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Letter to B. Keith Taber from Shane R. Sandal dated February 7, 2017

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT – NRC INTEGRATED
INSPECTION REPORT 05000424/2016004 AND 05000425/2016004 AND
FOLLOWUP ASSESSMENT LETTER

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Report No.: 05000424/2016004; and 05000425/2016004

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Electric Generating Plant, Units 1 and 2

Location: Waynesboro, GA 30830

Dates: October 01, 2016 through December 31, 2016

Inspectors: E. Coffman, Senior Resident Inspector (Acting)
A. Alen, Resident Inspector
B. Caballero, Senior Operations Engineer (1R11)
W. Pursley, Health Physicist Inspector (2RS5)

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

Enclosure

SUMMARY

IR 05000424/2016004; and 05000425/2016004, 10/01/2016, through 12/31/2016; Vogtle Electric Generating Plant, Units 1 and 2, Maintenance Effectiveness; Quarterly Integrated Inspection Report

The report covered a 3-month period of inspection by resident and regional inspectors. One self-revealing violation is documented in this report. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated April 29, 2015. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas" dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated 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, not identified in the Report Details, are identified in the List of Documents Reviewed section of the Attachment.

Cornerstone: Initiating Events

- (Green). A self-revealing non-cited violation (NCV) of Technical Specifications (TS) 5.4.1.a, "Procedures," was identified for the licensee's failure to properly install shims when assembling electrical connectors on Unit 2 main steam isolation valve (MSIV) HV-3026B, in accordance with maintenance procedure 25709-C, "Instructions for EGS Grayboot Connection Kit Installation," Ver. 21.1. The licensee replaced the affected connectors and entered the issue in their corrective action program under condition reports (CR) 10279411, and 10268507, and technical evaluations (TE) 970299, 968149, and 970300, to evaluate and develop additional training for maintenance technicians, enhance the maintenance procedure, and conduct extent of condition.

The performance deficiency (PD) was more-than-minor, because it adversely effected the Initiating Events cornerstone objective when Unit 2 received an automatic reactor trip and safety injection on March 14, 2015. Also, if left uncorrected, the PD would result in moisture intrusion and degradation of MSIV connectors and potentially lead to a more significant safety concern. The finding was determined to be Green, because the PD did not result in a loss of mitigation equipment used to transition the reactor to a stable shutdown condition. The finding was assigned a cross cutting aspect of "Procedure Adherence," because maintenance technicians failed to adhere to procedural guidance in Attachment 1 of 25709-C for installing the connector shims. (H.8) (1R12)

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near full rated thermal power (RTP) for the entire inspection period.

Unit 2 began the report period at full RTP. On October 8, 2016, operators briefly reduced power to approximately 70-percent RTP to support grid stability due to grid impacts from Hurricane Matthew. Unit 2 remained at or near full 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

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

- Units 1 and 2 refueling water storage tanks (RWST)
- Unit 2 nuclear service water system (NSCW)

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 two systems were correctly aligned by performing partial walkdowns. The inspectors determined the correct system lineup by reviewing plant procedures and drawings.

- Unit 1, 'A' train of the safety injection (SI) system while the 'B' train was out of service (OOS) for planned maintenance.
- Unit 2, 'A' train NSCW system transfer pump while the 'B' train transfer pump was OOS for planned maintenance.

Complete Walkdown: The inspectors verified the alignment of the Unit 2 'B' train NSCW system by reviewing plant procedures, drawings, the updated final safety analysis report, and other documents. The inspectors also reviewed records related to the system outstanding design issues, maintenance work requests, and deficiencies.

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

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 for the following four fire areas.

- Unit 2 auxiliary feedwater (AFW) pump house, fire zones 155, 156, 157A, and 157B
- Unit 1, level "B" east and west penetration areas, fire zones 60, 61, 64, 62, 63, and 82
- Unit 1, auxiliary building (AB) "B" level penetration area and trains "A" and "B" of the auxiliary component cooling water (ACCW) and safety injection (SI) pump rooms, fire zones 26B, 30, 31, 32, and 33
- Unit 2, trains "A" and "B" auxiliary component cooling water (ACCW) heat exchanger rooms, fire zones 49, and 52

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.

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.

- Unit 2, 'A' and 'B' component cooling water (CCW) pump rooms
- Unit 2, 'A' and 'B' centrifugal charging (CCP) pump rooms

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11)a. Inspection Scope

Annual Review of Licensee Regualification Examination Results: On August 22, 2016, the licensee completed the annual regualification operating examinations, and on November 17, 2016, the licensee completed the comprehensive biennial regualification written examinations, which are required to be administered to all licensed operators in accordance with Title 10 of the Code of Federal Regulations 55.59(a)(2), "Regualification Requirements," of the NRC's "Operator's Licenses." The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Regualification Program." These results were compared to the thresholds established in Section 3.02, "Regualification Examination Results," of IP 71111.11.

Resident Inspector Quarterly Review of Licensed Operator Regualification: The inspectors observed an evaluated simulator scenario, V-RQ-SE-16601 (Ver. 1.1), administered to an operating crew, on November 7, 2016, conducted in accordance with the licensee's accredited regualification 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 2 'A' solid state protection system (SSPS) testing.

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

- Unit 2, 'B' train NSCW fan no. 3, high vibrations on driveshaft to gearbox coupling.
- Unit 2, 'B' reactor vessel level indicating system (RVLIS) loss of indication.
- Unit 2, MSIV HV-3026B, degraded 'Grayboot' connectors on actuator's solenoid-operated valves (SOVs).

b. Findings

Introduction: A Green self-revealing NCV of TS 5.4.1.a, "Procedures," was identified for the licensee's failure to properly install shims, when assembling electrical connectors on Unit 2 MSIV HV-3026B, in accordance with maintenance procedure 25709-C, "Instructions for EGS Grayboot Connection Kit Installation," Ver. 21.1.

Description: On March 25, 2016, as part of maintenance work order SNC 409970, "Clean/Inspect Hydraulic System and Air Filter," Unit 2 MSIV HV-3026B hydraulic actuator failed the 10-percent exercise stroke test when solenoid valve (SOV) 131A did not energize. While troubleshooting, it was also identified that SOV 130B cycled

(energize and de-energize) with jarring of the SOV wires and electrical connectors. SOV 130B is energized during normal power operations to support actuator hydraulic pressure buildup required to maintain the valve open. SOV 130B is de-energized on a MSIV close signal (i.e. steam line isolation signal) to close the MSIV. SOV 130B was last replaced on March 15, 2015, (work order SNC645129) after it was determined to have caused the failure of MSIV HV-3026B which resulted in a Unit 2 reactor trip and safety injection (SI) signal. Subsequent failure analysis of the SOV did not identify any deficiencies with the valve and the event was determined to be a random failure of the SOV. The electrical connectors were not included in the failure analysis.

Following the March 2016 test failure, the licensee replaced all four electrical connectors (i.e. pin and socket type connector) for 131A and 130B SOVs and sent them to an independent laboratory for failure analysis and a separate vendor investigation. The failure analysis (documented in CR10268117) identified corrosion degradation on the spring tines in three of the connector sockets. The corrosion caused high temperature across the connectors and subsequent increase in electrical resistance. Inspection of the SOV side of the connector identified the improper installation of shims. A shim was required to increase the outer diameter of the SOV wire insulation for an appropriate, environmentally qualified, sealed fit of the connector. Attachment 1 of procedure 25709-C, required (1) the application of heat to the shim until the appearance of the melted sealant around the entire circumference of the shim tubing was visible and (2) the shim be placed no more than 0.25-inches from the crimped end of the pin. Inspection of the shims (installed under work order SNC645129) found that sufficient heat was not applied to fully melt the sealant and shim placement was outside the distance requirement. Over time, these deficiencies resulted in moisture intrusion as evidenced by the corrosion noted in the connector sockets. SOV 131B was last replaced in March 2015 along with the pin side of the connector. The socket side connector was not replaced at that time. The socket side of the connector was not normally replaced during routine seven-year actuator refurbish PM outages; therefore this socket side connector was in service when MSIV HV-3026B closed in March 2015. Given the nonconforming installation of connector shims that allowed corrosion to occur, the inspectors determined the licensee's failure to properly install the connector shims most likely caused MSIV HV-3026B to close and resultant reactor trip and SI on March 15, 2015. The licensee entered this issue into their corrective action program to evaluate and develop additional training for maintenance technicians (CR10268507), enhance instructions in the procedure 25709-C (TE970299) and conduct an extent of condition review (CR10279411, TE968149, and TE970300).

Analysis: The failure to install electrical connector shims in accordance with maintenance procedure 25709-C was a performance deficiency (PD). The PD was more-than-minor, because it adversely effected the Initiating Events cornerstone objective when Unit 2 received an automatic reactor trip and SI, on March 14, 2015. Also, if left uncorrected, the PD would result in moisture intrusion and degradation of MSIV connectors and potentially lead to a more significant safety concern. The finding was screened using IMC 0609, Appendix A, dated June 19, 2012, and determined to be Green using Exhibit 1, Initiating Events, Transient Initiators, because the PD did not result in a loss of mitigation equipment used to transition the reactor to a stable shutdown condition. The finding was assigned a cross cutting aspect of "Procedure

Adherence,” because maintenance technicians failed to adhere to procedural guidance in Attachment 1 of 25709-C for installing the connector shims. (H.8)

Enforcement: Technical Specification 5.4.1.a, “Procedures,” required, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements,” of February 1978. RG 1.33, Appendix A, Item 9 recommended, in part, that maintenance activities that can affect the performance of safety-related equipment be covered by written procedures. Maintenance procedure 25709-C provided specific instructional steps to properly install shims for safety-related electrical connectors. Contrary to the above, the licensee did not implement safety-related maintenance procedure 25709-C for installing shims on SOV electrical connectors. This violation is being treated as an NCV consistent with the Enforcement Policy: NCV 05000425/2016004-01, Failure to Implement Maintenance Procedure for SOV Electrical Connectors. This violation was entered into the licensee’s corrective action program as CR 10268117.

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

a. Inspection Scope

The inspectors reviewed the two 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 2, November 21, 2016, GREEN risk profile and risk management actions associated with extended outage of the ‘B’ train NSCW transfer pump.
- Unit 2, December 20, 2016, projected YELLOW risk profile due to unplanned maintenance on ‘A’ train NSCW transfer pump and ‘A’ train emergency diesel generator (EDG).

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 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.

- Units 1 and 2, prompt determination of operability (PDO) for turbine-driven auxiliary feedwater (AFW) pumps' ability to deliver the required flow and head for all accident conditions, CR10293456
- Units 1 and 2, PDO for motor-driven AFW pumps' ability to deliver the required flow and head for all accident conditions, CR10294168
- Unit 1, immediate determination of operability (IDO) for AFW to condensate storage tank (CST) supply to AFW pump #2 exceeds seismic torque limit after including EDG voltage and frequency variations, CR10285154
- Unit 2, operability determination of 'A' train EDG with ventilation damper, TV-12097, stuck close, CR10286734

Operator Workaround Review: The inspectors performed a detailed review of the licensee's operator workaround, operator burden, and/or control room deficiency listed below. The inspectors verified the licensee identified operator workarounds and/or burdens at an appropriate threshold and entered them in the corrective action program. The inspectors verified that the licensee identified the full extent of issues, performed appropriate evaluations, and planned appropriate corrective actions. The inspectors also reviewed compensatory actions and their cumulative effects on plant operation. Documents reviewed are listed in the attachment.

- Unit 1, train 'B' plant safety monitoring system (PSMS) plasma display workaround in the event of a fire in area 1CBLCB, CR10282562

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 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.

- SNC819393, Unit 2 'B' train NSCW fan no. 1 gearbox replacement, 10/6/16

- SNC563943-50, Unit 2 'A' train NSCW fan no. 4 driveshaft assembly replacement, 10/18/16
- SNC822805, Unit 1 loop 1 upstream MSIV repair hydraulic leak
- SNC822133, Unit 1 'A' EDG west fuel oil filter replacement, 11/14/16
- SNC801219, Unit 2 'A' EDG operability test following troubleshooting of control air subsystem leaks, 12/19/16

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.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the two 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

- 14150-C, Wet Bulb Temperature Determination with Psychrometer, version 3

In-Service Tests (IST)

- 14803A-1, Train A Component Cooling Water Pumps and Check Valve IST and Response Time Tests (Sections 5.1, 5.2, and 5.3), version 7

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS5 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed the licensee's radiation monitoring instrumentation programs to verify the accuracy and operability of radiation monitoring instruments used to monitor areas, materials, and workers to ensure a radiologically safe work environment during normal operations and under postulated accident conditions.

Walkdowns and Observations: During tours of the site areas, the inspectors observed installed radiation detection equipment including the following instrument types: area radiation monitors (ARMs), continuous air monitors (CAMs), personnel contamination monitors (PCMs), small article monitors (SAMs), and portal monitors (PMs). The inspectors observed the calibration status, physical location, material condition and compared technical specifications for this equipment with Updated Final Safety Analysis Report (UFSAR) requirements. In addition, the inspectors observed the calibration status and functional checks of selected in-service portable instruments and discussed the bases for established frequencies and source ranges with RP staff personnel. The inspectors reviewed periodic source check records for compliance with plant procedures and manufacturer's recommendation for selected instruments and observed the material condition of sources used.

Calibration and Testing Program: The inspectors reviewed calibration data for selected ARMs, PCMs, PMs, SAMs, and laboratory instruments as well as the last calibration and methodology for the whole body counter. The inspectors reviewed calibration data, methodology used and the source certification for the A train of the unit one containment high range monitors. The current output values for the portable instrument calibrator and the instrument certifications used to develop them were reviewed by the inspectors. The inspectors reviewed the licensee's process for investigating instruments that are removed from service for calibration or response check failures and discussed specific instrument failures with plant staff. In addition, the inspectors reviewed 10CFR-61 data to determine if sources used in the maintenance of the licensee's radiation detection

instrumentation were representative of radiation hazards in the plant and scaled appropriately for “hard to detect” nuclides.

Problem Identification and Resolution: The inspectors reviewed and discussed selected Corrective Action Program (CAP) documents associated with radiological instrumentation including licensee sponsored assessments. The inspectors evaluated the licensee’s ability to identify and resolve issues

Inspection Criteria: Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, “Clarification of TMI Action Plan Requirements”; UFSAR Chapters 11 and 12 and applicable licensee procedures. Documents reviewed are listed in the report 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 verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, “Regulatory Assessment Performance Indicator Guideline,” and licensee procedures.

Cornerstone: Mitigating Systems

- safety system functional failures (Units 1 and 2)
- emergency AC power system (Units 1 and 2)
- cooling water system (Units 1 and 2)

The inspectors reviewed plant records compiled October 1, 2015, and September 30, 2016 to verify the accuracy and completeness of the data reported for the station. 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.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

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

.2 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 repetitive malfunctions of Unit 2 MSIV (HV-3026B) actuator SOVs, 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 July 2016 thru December 2016 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.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of corrective action reports (CARs) 266163 and 267331, associated with the failure of the Unit 2 'B' train NSCW fan no. 3 driveshaft to gearbox coupling.

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.

4OA5 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 to determine if they 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.

.2 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 November 19, 2016. 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 and observed the loading activities 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 February 2, 2017, the resident inspectors presented the inspection results to Mr. B. Keith Taber and other members of the licensee's staff. The inspectors confirmed that proprietary information provided or examined during the inspection period was properly controlled.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

T. Baker, Security Manager
D. Komm, Operations Director
J. Dixon, Radiation Protection Manager
T. Fowler, Chemistry Manager
D. Sutton, Regulatory Affairs Director
S. Harris, Operations Manager
D. Myers, Plant Manager
K. Taber, Site Vice-President
I. White, Licensing Supervisor
K. Walden, Licensing Engineer
L. Beasley, Chemistry Supervisor
M. Williams, RP Superintendent

NRC personnel:

Shane Sandal, Chief, Region II Reactor Projects Branch 2
Matthew Endress, Vogtle Senior Resident Inspector

LIST OF REPORT ITEMS

Opened and Closed

NCV 05000425/2016004-01, Failure to Implement Maintenance Procedure for Electrical Grayboot Connectors (1R12)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

11877-1, Cold Weather Checklist, Ver. 22.1
11877-2, Cold Weather Checklist, Ver. 22.1
11901-2, Heat Tracing System Alignment, last reviewed 10/2/16
11901-2, Heat Tracing System Alignment, last reviewed 11/21/16
NMP-GM-025, Site Certification Letter for Winter Period, Signed 11/15/16

Drawings

1X4DB121, Ver. 42, P&I Diagram – Safety Injection System – System No. 1204
2X4DB121, Ver. 50, P&I Diagram – Safety Injection System – System No. 1204
2X4DB133-1, Ver. 54.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202
2X4DB133-2, Ver. 54.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202

Other

Tagout

2-CA-15-1805-00135
2-OP-15-1817-00042
2-OP-16-1817-00115

Section 1R04: Equipment Alignment

Procedures

13150B-2, Train B Nuclear Service Cooling Water System, Rev. 11

Drawings

1X4DB121, Ver. 42, Unit 1 P&I Diagram – Safety Injection System – System No. 1204
2X4DB133-1, Ver. 54.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202
2X4DB133-2, Ver. 54.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202
2X4DB134, Ver. 31.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202
2X4DB135-1, Ver. 28.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202
2X4DB135-2, Ver. 29.0, P&I Diagram – Nuclear Service Cooling Water System – Sys. No. 1202

Other

Tagout 1-DT-16-1204-00187, 1B SI Pump (1-1204-P4-006)
Tagout 2-DT-16-1202-00018(002), Electrically/Hydraulically Isolate NSCW transfer pump #7 (2-1202-P4-007) for removal/refurbishment/re-installation
CRs 884322, 490983, 338498, 10167367, 10303209, 10260655, 10304555, 10300303

Section 1R05: Fire Protection Annual/Quarterly

Procedures

92726B-1 Rev. 3.2, Zone 26B – Auxiliary Building – Levels A&B Fire Fighting Preplans
92730-1 Rev. 1.2, Zone 30 – Auxiliary Building – Level B Fire Fighting Preplan
92731-1 Rev. 3.1, Zone 31 – Auxiliary Building – Level B Fire Fighting Preplan
92732-1 Rev. 2.0, Zone 32 – Auxiliary Building – Level B Fire Fighting Preplan
92733-1 Rev. 4.0, Zone 33 – Auxiliary Building – Level B Fire Fighting Preplan
92749-2 Rev. 3.0, Zone 49 – Auxiliary Building – Level 1, Train A ACCW Hx, Fire Fighting Preplan

92752-2 Rev. 2.0, Zone 52 – Auxiliary Building – Level 1, Train B ACCW Hx, Fire Fighting Preplan
 92760-1 Rev. 1.2, Zone 60 – Control Building – Level B, Fire Fighting Preplan
 92761-1 Rev. 2.1, Zone 61 – Control Building – Level B, Fire Fighting Preplan
 92762-1 Rev. 4.0, Zone 62 – Control Building – Level B, Fire Fighting Preplan
 92763-1 Rev. 1.2, Zone 63 – Control Building – Level B, Fire Fighting Preplan
 92764-1 Rev. 4.1, Zone 64 – Control Building – Level B, Fire Fighting Preplan
 92782-1 Rev. 1.2, Zone 82 – Control Building – Level B, Fire Fighting Preplan
 92855-2 Rev. 0.2, Zone 155 - Auxiliary Feedwater Pumphouse - Train B Fire Fighting Preplan
 92856-2 Rev. 0.2, Zone 156 - Auxiliary Feedwater Pumphouse - Train A Fire Fighting Preplan
 92857A-2 Rev. 0.1, Zone 157A - Auxiliary Feedwater Pumphouse -Train C Fire Fighting Preplan
 92857B-2, Rev. 0.2, Zone 157B – Auxiliary Feedwater Pumphouse – Train C Fire Fighting Preplan

Section 1R06: Flood Protection Measures

Calculations

X6CXC-28, Rev. 11, Flooding Analysis Auxiliary Building Level “A”
 X6CYC-26, Rev. 10, Flooding Analysis Auxiliary Building Level “C”

Drawings

2X4DB146-1, Ver. 15, Unit 2 P&I Diagram – Auxiliary Building & Misc. Drains – System No. 1215
 2X4DB147-2, Ver. 8, Unit 2 P&I Diagram – Auxiliary Building Flood Retaining Rooms - Alarms and Drains – System No. 1218
 AX1D08A03-4, Rev. 8, Auxiliary Building Floor Plan El. 143 ft. 6 in Level C
 AX4DJ8011, Rev. 7.0, Fire Areas Auxiliary Building Floor Plan El. 143 ft. 6 in Level C

Section 1R11: Licensed Operator Regualification Program and Licensed Operator Performance

Procedures

NMP-AP-003, Solid State Protection System Train A Operability Test, 10/16/2016
 NMP-EP-110 Ver. 8.1, Emergency Classification Determination and Initial Action
 NMP-EP-111 Ver. 11.0, Emergency Notifications

Other

V-RQ-SE-16601, Ver. 1.0, Simulator Exercise Guide
 SNC780050, Train ‘A’ Solid State Protection System Operational Test

Section 1R12: Maintenance Effectiveness

Procedures:

NMP-ES0027-001, Maintenance Rule Implementation, Ver. 7
 25709-C, Instructions for EGS Grayboot Connection Kit Installation, Ver. 21.1

Corrective Action Program Records

Technical Evaluation (TEs)

970300, Grayboot GB-1A extent of condition
 968800, Develop JITT material for grayboot install
 954523, MEVAL for bad grayboot connection

967764, Training gap needs analysis
 971371, Unit 2 RVLIS indication unavailable for 'B' Channel

CRs 10268507, 10202053, 10279411, 10201696, 10297066, 10285540, 10285507, 10285565,
 397688, 10146279, 10165634, 10087084, 10259814
 CAR 256055, Auto Reactor Trip/SI on Unit 2 due to MSIV 2HV3026B failing closed, Ver. 1.0

Maintenance Work Order (MWO)

SNC380550, Remove/Rebuild/Replace Actuator 2HV3026B
 SNC645129, 2HV3026B has bad 130B dump solenoid
 SNC440610, 36 Month Westinghouse PSMS (RPU-B2 & B3) Cabinet Inspection
 SNC409970, Clean/Inspect Hydraulic System and Air Filter

Other

Maintenance Rule Functions for Unit 2 System 1301, Main Steam System
 AX3AJ11B-00058, Installation and Removal Instructions for EGS Grayboot 'A' Connectors, Rev. 2
 Exelon Power Labs, Failure Analysis of EGS Grayboot Connectors, July 14, 2016 (PO No.
 SNG10134076)

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

NMP-GM-031-001, Ver. 3.0, Online Maintenance Rule (a)(4) Risk Calculations

Other

C.R. Pierce, Regulatory Affairs Director of Southern Nuclear Operating Company, letter to U. S. Nuclear Regulatory Commission, "Vogtle Electric Generating Plant, Unit 2, Response to Request for Additional Information Regarding Request to Revise Technical Specifications LCO 3.7.9 for a One-Time Change to Support a Unit 2 Nuclear Service Cooling Water Transfer Pump Refurbishment," September 15, 2016 (ML16259A371)
 J.T. Wheat, Nuclear Licensing Manager of Southern Nuclear Operating Company, letter to U. S. Nuclear Regulatory Commission, "Vogtle Electric Generating Plant, Unit 2, Request to Revise Technical Specifications LCO 3.7.9 for a One-Time Change to Support a Nuclear Service Cooling Water Transfer Pump Refurbishment," August 12, 2016 (ML16225A619)
 R. Martin, Senior Project Manager of U.S. Nuclear Regulatory Commission, letter to Southern Nuclear Operating Company, "Vogtle Electric Generating Plant, Unit 2 – Issuance of Amendment for 2B Nuclear Service Water Transfer Pump," October 31, 2016 (ML16265A162)
 Standing Order No. 2-2016-6 Ver. 1.0, NSCW Basin Transfer Alternate Method
 Unit 2, EOOS Integrated Risk Report for December 20, 2016
 Unit 2, EOOS Integrated Risk Report for November 21, 2016
 Unit 2, Narrative Control Room Logs for December 21, 2016
 Unit 2, Narrative Control Room Logs for November 21, 2016

Section 1R15: Operability Determinations and Functionality Assessments

Drawings

2X4DB161-2, Ver. 29, Unit 2 P&I Diagram – Auxiliary Feedwater System – System No. 1302

Calculations/Analyses

DOEJ-VX2-16-003-M001 Ver. 1.0, Assessment of MDAFW Capability Supporting PDO 2-16-003 LTR-TA-16-148, Vogtle Units 1 and 2: Auxiliary Feedwater Flow Assumptions Modeled in the Feedwater System Pipe Break (Feedline Break Analysis), dated November 3, 2016
 Westinghouse Letter, Transmittal of Vogtle Units 1 and 2: Better-Estimate Feedline Break Analysis to Support and Operability Determination for a Degraded Auxiliary Feedwater Flow Rate, dated November 17, 2016
 X4C2107V03, Diesel Generator Building Ventilation Requirement, Rev. 1.0
 X4C2107V06, Assessment of the Operation of a Restricted D/G building Ventilation System, Rev. 0

Other

Commitment No. SNC16055, Verification of MDAFW developed flow and pressure
 Commitment No. SNC16056, Verification of TDAFW developed flow and pressure
 NUREG-1022, Event Report Guidelines 10 CFR 50.72 and 50.73: Final Report, Rev.3
 NUREG-1137, Safety Evaluation Report related to the operation of Vogtle Electric Generating Plant, Units 1 and 2, June 1985
 PDO No. 2-16-003, Ver. 1.0
 Standing Order No. C-2016-7, Ensure that all EDG frequencies are maintained above 59.6Hz while in operation
 Standing Order No. 1-2016-3, Fire barrier for PSMS monitors inadequate, Ver. 1.0
 RER No. 2000-0207, Diesel operability with non-ESF damper and/or maintenance hatch open for maintenance
 CR 640597, Worn linkages and bushings of damper 2-TV-12097

Section 1R19: Post Maintenance TestingProcedures

GEN -95-Chapter-38, Diesel Generator Surveillance Manual – GEN-95 – Fuel Oil Filter, Rev 1.1
 14430-2 Rev. 9, NSCW Cooling Tower Fans Monthly Test – Fan No. 4, completed 10/19/16

Other

AX4AD02-00147, Instruction Manual for Fans Gear Reducers and Motors, Rev 11
 CRs 10289324, 10287288, 10307424, 10310253, 10311064, 10287768

Work Orders

SNC835091, Repair small air leaks on 2A EDG shutdown logic board
 SNC563943, 2A NSCW fan 4 oil sample, fan blade clean/inspect, and gear reducer inspection

Section 1R22: Surveillance TestingCompleted Procedures

14803A-1, Train A Component Cooling Water Pumps and Check Valve IST and Response Time Tests (Sections 5.1, 5.2, and 5.3), completed 11/23/16
 14150-C, Wet Bulb Temperature Determination with Psychrometer, completed 10/10/16 and 10/11/16

Drawings

1X4DB136, Ver. 33, Unit 1 P&I Diagram – Component Cooling Water System – System 1203
 1X4DB137, Ver. 19, Unit 1 P&I Diagram – Component Cooling Water System – System 1203

Other

ASME OM Code-2001, Code for Operation and Maintenance of Nuclear Power Plants

B. J. George, Southern Nuclear Plant Vogtle, letter to U. S. Nuclear Regulatory Commission,
 "Vogtle Electric Generating Plant Third Interval Inservice Testing (IST) Program Update," April
 16, 2007

Pshychron Catalog No. 566 Instruction Book

Section 2RS5: Radiation Monitoring InstrumentationProcedures, Guidance Documents, and Manuals

NMP-HP-303, Personnel Decontamination, Ver. 2.6

NMP-HP-700, "Radiation Protection Instrumentation Program," Ver. 1.1

NMP-HP-703, RO-2, RO-2A and RO-20 Operation and Calibration, Ver. 2.1

NMP-HP-708, Operation and Calibration of the MGPI Telepole Instrument, Ver. 3.0

NMP-HP-709, Calibration of the Small Article Monitor (SAM-12), Ver. 2.2

NMP-HP-715, Operation and Calibration of the Ludlum Model 9-3 ION Chamber, Ver. 2.1

NMP-HP-717, Operation and Calibration of the AMP-100/200 Dose Rate Meter, Ver. 2.0

NMP-HP-718, "Operation and Calibration of the CANBERRA GEM-5 Gamma Exit Monitor",
 Ver. 2.2

NMP-HP-719, Operation and Calibration of the CANBERRA ARGOS-5AB Exit Monitor, Ver. 4.1

NMP-CH-021-005, Operation of Liquid Scintillation Systems, Ver. 2.0

33036-C, Test Stand Calibration Scheduling Program, Ver. 39

33036-APEX, Cal. of the Gamma Spectroscopy System for Radiochemistry Using APEX, Ver. 5

34327-1, Operation of Unit 1 RE-0810, Ver. 12

43635-C, Operation and Calibration of the AMS-4 Continuous Air Monitor, Ver. 18.2

43685-C, Calibration and Operation of ASP-1, Ver. 20.5

43689-C, Calibration of the (SAM) Small Articles Monitor, Ver. 7

43693-C, Operation and Use of the JL Shepard Model 89-400 Calibrator, Ver. 2.3

43694-C, Operation and Use of the JL Shepherd Model 149 Shielded Calibrator, Ver. 2.0

43695-C, Operation and Use of the JL Shepherd Model 28-5 Shielded Calibrator, Ver. 1.3

Records and Data

Work Order SNC407210, 1RE005 Channel Calibration CNTMT HI Range TRN-A, 09/29/2014

Work Order SNC517204, 1RE005 Channel Calibration CNTMT HI Range TRN-A, 02/16/2016

Work Order SNC394408, 1RE005 Isotopic/Channel Calibration CNTMT HI Range TRN-A,
 03/18/2014

Work Order SNC394409, 1RE005 Isotopic/Channel Calibration CNTMT HI Range TRN-A,
 09/24/2015

VEGP Source ID# 0159-00-00 Cert. of Calibration Model No. 878-10 Calibrator, Serial #117.

Eberline SAM-11 #1158 Calibration, 05/18/2016

Thermo Scientific SAM-12 #1345 Calibration, 02/03/2016

Canberra GEM-5 #1492 Calibration, 11/12/2015

Canberra ARGOS #1493 Calibration, 11/13/2015

Canberra iSOLO #1343 Calibration, 04/19/2016

Eberline RM-14 Serial #1451 Calibration, 01/27/2016

Eberline RO2A Serial #0034 Calibration, 03/17/2016

Thermo Scientific AMS-4 #1499 Calibration, 01/05/2016

Calibration Record for HPGe Detector 3, 02/10/2015

Model 28-5 Calibrator, Source VEGP 0292, Calibration Record, Dated 07/07/2016
 Model 89-400 Calibrator, Source VEGP 0413, Calibration Record, Dated 07/08/2016
 Model 878-10 Calibrator, Source VEGP 1049, Calibration Record, Dated 10/28/2016
 Health Physics Daily Instrument Check Sheet, 11/17/2016
 10CFR61 Analysis DAW2015V Sample Report, 3/10/2016
 System Health Reports, Unit 1 and Unit 2 for System 1609-Rad Monitoring System,
 2nd Quarter 2016

Corrective Action Program Documents

Check In Self-Assessment Report, Radiation Monitoring Instrumentation, 10/31/2016
 CRs 10208462, 10269949, 10205946, 10215701, 10232688, 809512, 10195788, 10259195,
 and 10299094

Section 4OA1: Performance Indicator Verification

Bases Documents:

NRC Mitigating System Performance Index (MSPI) Basis Document – Vogtle Electric Generating
 Plant Units 1 and 2, Ver. 8

Procedures

00163-C, Rev. 14.6, NRC Performance Indicator and Monthly Operating Report Preparation and
 Submittal
 NEI 99-02 Rev. 7, Regulatory Assessment Indicator Guideline

Records and Data

System Health Reports for Unit 1 and Unit 2 System 1202, Nuclear Service Water System
 System Health Reports for Unit 1 and Unit 2 System 1204, Component Cooling Water
 System Health Reports for Unit 1 and Unit 2 System 2403, Emergency Diesel Generator
 Unit 1 and Unit 2 Operations Logs for entries: “LCO 3.8.1”, “LCO 3.7.7”, and “LCO 3.7.8”,
 between 10/1/2015 – 09/30/2016

Monthly MSPI Derivation Reports

Unit 1, MSPI Cooling Water Systems, Unavailability Index (UAI), September 2016
 Unit 1, MSPI Cooling Water Systems, Unreliability Index (URI), September 2016
 Unit 1, MSPI Emergency AC Power System, Unavailability Index (UAI), September 2016
 Unit 1, MSPI Emergency AC Power System, Unreliability Index (URI), September 2016
 Unit 2, MSPI Cooling Water Systems, Unavailability Index (UAI), September 2016
 Unit 2, MSPI Cooling Water Systems, Unreliability Index (URI), September 2016
 Unit 2, MSPI Emergency AC Power System, Unavailability Index (UAI), September 2016
 Unit 2, MSPI Emergency AC Power System, Unreliability Index (URI), September 2016

Section 4OA2: Problem Identification and Resolution

Procedures

27445-C, Marley (NSCW) Cooling Tower Fan and Gear Reducer Maintenance, Ver. 16.2

Drawings

AX4AD02-42-8, Plan View of Fan Deck, 4/30/84
 AX4AD02-00041, NSC Tower Typical Cross Section Ver. 1.0

Corrective Action Program RecordsCondition Reports (CRs)

102911192, Revise ERC for 2B NSCW fan failure due to new findings
 10249488, Unit 2 NSCW B Fan 3 High Vibrations

Corrective Action Reports (CAR)

191598, 2B NSCW Fan #3 shut down after high motor vibration alarm, 1.0
 266163, Equipment Reliability Checklist for 2B NSCW fan failure, 8/29/16 and 11/18/16

Other

AX4AD02-000147, Instruction Manual for Fans Gear Reducers and Motors
 Unit 2 B Trains NSCW Gearbox/Motor/Fan Vibration Data, 4/2011 – 7/2016

Maintenance Work Orders

2102351201, Replace fan gearbox and driveshaft
 SNC412160, Unit 2 B train NSCW fan #3 – Torque blades, change oil and inspect
 SNC383997, Replaced Rubber Bushings on the NSCW fan coupling

Section 4OA5: Other Activities – ISFSIProcedures

93700-C, Used Fuel Loading and Unloading Outage Guidelines, Ver. 7.0
 93711-C, HI-STROM System Site Transport, Ver. 7.0
 93713, MPC Fuel Loading Operations, Ver. 7.0
 93714, MPC Closure Operations, Ver. 12.0
 93641-C, Development and Implementation of the Fuel Shuffle Sequence Plan, Completed
 8/24/16 for MPC-364
 93641-C, Development and Implementation of the Fuel Shuffle Sequence Plan, Completed
 11/17/16 for MPC-373

Procedure Changes and Associated 10CFR72.48 Screening/Evaluations

Procedure Approval Form (PAF)-93700-C-Version (V) 5

PAF-93700-C-V7	PAF-93711-C-V7	PAF-93714-C-V10
PAF-93711-C-V4	PAF-93713-C-V6	PAF-93714-C-V11
PAF-93711-C-V5	PAF-93713-C-V7	PAF-93714-C-V12
PAF-93711-C-V6	PAF-93714C-V9	

Work Orders

SNC789124, UFLO 3 – MPC A2209V4017 S/N 364 and HI-STORM A2209H2017 S/N 861
 Cask Loading, 10/28/16
 SNC789133, UFLO 3 – MPC A2209V4026 S/N 373 and HI-STORM A2209H2026 S/N 870
 Cask Loading, 11/23/16

Other

LDCR 2016040, 10 CFR 72.212 Report Revision for CTF Thermal Calculation
 HI-STORM 100 Cask System FSAR, Holtec Report HI-2002444, Rev. 13
 HI-STORM 100 Certificate of Compliance (CoC 1014), Amendment