



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

January 29, 2016

Mr. Brian K. Taber, VP  
Southern Nuclear Operating Company, Inc.  
Vogtle Electric Generating Plant  
7821 River Road  
Waynesboro, GA 30830

**SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000424/2015004, 05000425/2015004, AND 07201039/2015001**

Dear Mr. Taber:

On December 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 1 and 2. The enclosed integrated inspection report documents the inspection results which were discussed on January 25, 2016, with Mr. D. Myers and other members of your staff.

NRC inspectors documented one self-revealing finding of very low safety significance (Green) in this report. Further, inspectors documented a licensed-identified violation which was determined of very low safety significance in this report. These findings were determined to involve violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCV) consistent with Section 2.3.2 of the Enforcement Policy. If you contest these violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Vogtle Electric Generating Plant.

B. Taber

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Sincerely,

*/RA/*

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

Docket Nos.: 05000424, 05000425 and 07201039  
License Nos.: NPF-68 and NPF-81

Enclosures:  
Inspection Report 05000424/2015004,  
05000425/2015004, and 07201039/2015001  
w/Attachment: Supplementary Information

cc: via Listserv

Distribution w/encl:  
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In accordance with 10 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 Public Document Room or from the Publicly Available Records System (PARS) component of 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).

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PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE       NON-SENSITIVE  
 ADAMS:  Yes      ACCESSION NUMBER: ML16029A333       SUNSI REVIEW COMPLETE       FORM 665 ATTACHED

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NAME	M. Cain	A. Alen	T. Chandler	D. Mas-Penaranda	B. Caballero	P. Cooper
DATE	1/26/2016	1/28/2016	1/26/2016	1/26/2016	1/26/2016	1/27/2016
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DATE	1/26/2016	1/29/2016	2/ /2016	2/ /2016	2/ /2016	2/ /2016
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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Report Nos.: 05000424/2015004, 05000425/2015004, and  
07201039/2015001

Licensee: Southern Nuclear Operating Company, Inc. (SNC)

Facility: Vogtle Electric Generating Plant, Units 1 and 2

Location: Waynesboro, GA 30830

Dates: October 01, 2015 through December 31, 2015

Inspectors: M. Cain, Senior Resident Inspector  
A. Alen, Resident Inspector  
T. Chandler, Resident Inspector  
D. Mas-Peñaranda, Project Engineer  
B. Caballero, Senior Operations Engineer (1R11)  
P. Cooper, Reactor Inspector (1R08, 4OA5))  
R. Carrion, Senior Reactor Inspector (1R08)

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000424/2015-004, 05000425/2015-004, and 07201039/2015-001; 10/01/2015 - 12/31/2015; Vogtle Electric Generating Plant, Units 1 and 2; Maintenance Effectiveness.

The report covered a 3-month period of inspection by resident inspectors. One Green finding was identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated April 29, 2015. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas" dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," revision 5. Documents reviewed which are not specifically identified in the Report Details are listed in the List of Documents Reviewed section of the Attachment.

### Cornerstone: Mitigating Systems

- **Green:** A Green self-revealing NCV of TS 5.4.1, "Procedures," was identified for the licensee's failure to implement replacement schedules for 7300 process protection and control (PP&C) system cards in accordance licensee fleet maintenance procedures. As a result, failure of a 7300 PP&C card rendered the Unit 2 B train of nuclear service water system (NSCW) inoperable. The violation was entered into the licensee's corrective action program as condition report (CR) 10124315 and corrective action report (CAR) 261373.

The failure to implement replacement schedules for 7300 PP&C system cards in accordance with maintenance procedure NMP-MA-015 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective in that the failure of the 7300 PP&C card affected the availability of the Unit 2B train of NSCW. The finding screened as having very low safety significance (i.e. Green) because it did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time. No cross-cutting aspect was assigned to this finding because the inspectors determined that the cause of the finding was not indicative of current licensee performance because the licensee has established a change management process that would prevent the Performance Deficiency from occurring. (Section 1R12)

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

## REPORT DETAILS

### Summary of Plant Status

Unit 1 was shut down for planned refueling outage at the beginning of the inspection period and restarted on October 21, 2015. On October 27, 2015, the unit was shut down to conduct repairs to the 6A feedwater heater. The unit was restarted on October 28, 2015, and attained full power on October 30, 2015. Unit 1 remained at or near full RTP for the remainder of the inspection period.

Unit 2 operated at or near full RTP for the entire inspection period.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, 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 written for extreme low temperatures for the following risk-significant systems. 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 seasonal extreme weather conditions.

- Unit 1 auxiliary feed water (AFW) system (both trains)
- Unit 2 emergency diesel generator (EDG) system (both trains)

Impending Adverse Weather Conditions: The inspectors reviewed the licensee's preparations to protect risk-significant systems from severe weather conditions associated with a tornado watch issued by the National Weather Service on November 18, 2015. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of and during the adverse weather conditions. The inspectors verified that operator actions specified in the licensee's adverse weather procedure maintain readiness of essential systems. The inspectors verified that required surveillances were current, or were scheduled and completed, if practical, before the onset of anticipated adverse weather conditions. The inspectors also verified that the licensee implemented periodic equipment walkdowns or other measures to ensure that the condition of plant equipment met operability requirements.

##### b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)a. Inspection Scope

Partial Walkdown: The inspectors verified that critical portions of the system below was correctly aligned by performing a partial walkdown. The inspectors selected this system for assessment because it had been recently realigned. The inspectors determined the correct system lineup by reviewing plant procedures and drawings.

- Unit 1 AFW system standby re-alignment following refueling outage startup operation

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

To verify the licensee was identifying and resolving equipment alignment discrepancies, the inspectors reviewed corrective action documents, including condition reports and outstanding work orders, as well as 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 selected fire plans procedures by comparing the procedures to the defined hazards and defense-in-depth features specified in the fire protection program. In evaluating the fire plans procedures, the inspectors assessed the following attributes.

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

The inspectors toured the following five fire areas to assess material condition and operational status of fire protection equipment.

- Unit 1, nuclear service water system (NSCW) towers and mechanical and electrical tunnels, fire zones 145, 146, 146A, 160A, and 160B
- Unit 2, NSCW towers and mechanical and electrical tunnels, fire zones 145, 146, 146A, 160A, and 160B
- Unit 1, train A EDG building and fuel oil storage tank building, fire zones 161 and 163
- Unit 1, engineered safety features (ESF) chiller and normal air conditioning rooms, fire zones 125A, 126A, 135, 153, 178, 179, and 180
- North and south firewater pump houses, fire zones 530 and 531

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities

The inspectors reviewed implementation of the licensee's inservice inspection (ISI) program for monitoring degradation of the reactor coolant system boundary, risk-significant piping and component boundaries, and containment boundaries in Unit 1. The inspectors either directly observed or reviewed the following non-destructive examinations (NDEs) mandated by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code of Record: 2001 Edition with 2003 Addenda) to evaluate compliance with the ASME Code, Section XI and Section V requirements, and if any indications or defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement. The inspectors also reviewed the qualifications of the NDE technicians performing the examinations to determine whether they were current, and in compliance with the ASME Code requirements.

- Magnetic Particle Examination, 14-inch Pressurizer Surge Nozzle Weld to Lower Head, 11201-V6-002-W16, Class 2 (observed)
- Ultrasonic Examination (UT), 14-inch Pressurizer Surge Nozzle Inner Radius, 11201-V6-002-IR-06, Class 2 (observed)
- Visual Examination (VT-1), Reactor Vessel Head Closure Washers, 11201-V6-001-S01 thru S054, Class 2 (observed)
- VT-1, Reactor Vessel Head Closure Head Nuts, 11201-V6-001-N01 thru N054, Class 2 (observed)
- VT-2, Reactor Vessel Closure Head Exterior, 11201-V6-CRDM, Class 1 (reviewed)
- VT-3, Reactor Vessel Closure Head Interior, 11201-V6-001-I02, Class 1 (reviewed)



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

- WO SNC396173, Seal Weld on 1-1208-U4-033 2.5" Check Valve, Class 1
- WO SNC 659721, Butt Weld on 1-HV-9556B 0.5" Valve, Class 2

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

Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities: The inspectors verified that for the Unit 1 vessel head, a bare metal visual examination was required during this outage, in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). The inspectors reviewed the calculation of effective degradation years, the previous examination history, and reviewed the results of the VT-2 examination performed under the vessel head insulation, to verify that the examinations were performed in accordance with the requirements of ASME Code, Section XI, Article IWA-2212 requirements, and the frequency was consistent with the Code Case. The licensee did not identify any relevant indications that were accepted for continued service. Additionally, the licensee did not perform any welding repairs to the vessel head penetrations since the beginning of the last Unit 1 refueling outage; therefore, no NRC review was completed for these inspection procedure attributes.

Boric Acid Corrosion Control Inspection Activities: The inspectors reviewed the licensee's boric acid corrosion control (BACC) program activities to determine if the activities were implemented in accordance with the commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," and applicable industry guidance documents. Specifically, the inspectors performed an onsite records review of procedures, and the results of the licensee's containment walkdown inspections performed during the current refueling outage. The inspectors also interviewed the BACC program owner, conducted an independent walkdown of containment to evaluate compliance with licensee's BACC program requirements, and verified that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACC and corrective action programs (CAPs).

The inspectors reviewed Technical Evaluation #284012, Boric Acid Leakage/Residue on 11204U4117, to determine if the licensee properly assessed the effects of corrosion induced wastage on structural or pressure boundary integrity, in accordance with the licensee procedures. The inspectors also reviewed the condition reports (CRs) listed in the Attachment and associated corrective actions related to evidence of boric acid

leakage, to evaluate if the corrective actions completed were consistent with the requirements of the ASME Code and 10 CFR Part 50, Appendix B, Criterion XVI.

Steam Generator Tube Inspection Activities: The inspectors reviewed the eddy current (EC) examination activities performed in Unit 1 steam generators (SGs) 2 and 3 during the current refueling outage to verify compliance with the licensee's Technical Specifications (TSs), ASME BPVC Section XI, and Nuclear Energy Institute 97-06, "Steam Generator Program Guidelines." The typical Vogtle Unit 1 SG inspections consist of 100 percent full-length bobbin inspections of two SGs every other outage combined with a +Point™ program in all four SGs to address areas unable to be assessed by bobbin. Therefore, the inspectors noted that for SGs 1 and 4, a +Point™ probe was utilized for Row 1 and Row 2 as an area of special interest.

The inspectors reviewed the scope of the EC examinations, and the implementation of scope expansion criteria, to verify that they were consistent with the Electric Power Research Institute (EPRI) Pressurized Water Reactor Steam Generator Examination Guidelines, Revision 7. The inspectors reviewed documentation for a sample of EC data analysts, probes, and testers to verify that personnel and equipment were qualified to detect the applicable degradation mechanisms, in accordance with the EPRI Examination Guidelines. This review included a sample of site-specific Examination Technique Specification Sheets (ETSSs) to verify that their qualification and site-specific implementation were consistent with Appendix H or I of the EPRI Examination Guidelines. The inspectors also reviewed a sample of EC data for selected SG tubes with a qualified data analyst to confirm that data analysis and equipment configuration were performed in accordance with the applicable ETSSs and site-specific analysis guidelines. The inspectors reviewed data to verify that recordable indications were detected and sized in accordance with vendor procedures.

The inspectors selected a sample of degradation mechanisms from the Unit 1 Degradation Assessment report and verified that their respective in-situ pressure testing criteria were determined in accordance with the EPRI Steam Generator Integrity Assessment Guidelines, Revision 3. In addition, the inspectors reviewed EC indication reports to determine whether tubes with relevant indications were appropriately screened for in-situ pressure testing. The inspectors also compared the latest EC examination results with the last Condition Monitoring and Operational Assessment report for Unit 1 to assess the licensee's prediction capability for maximum tube degradation and number of tubes with indications. The inspectors verified that the licensee's evaluation to verify it was conservative, and that current examination results were bound by the Operational Assessment projections.

The inspectors assessed the latest EC examination results to verify that new degradation mechanisms, if any, were identified and evaluated before plant startup. The review of EC examination results included the disposition of potential loose part indications on the SG secondary side to verify that corrective actions for evaluating and retrieving loose parts were consistent with the EPRI Guidelines. Also, the inspectors normally review a sample of primary-to-secondary leakage data for Unit 1 to confirm that operational leakage in each SG remained below the detection or action level threshold,

during the previous operating cycle. However, there had been no primary-to-secondary during the previous operating cycle; therefore, there was no data to review.

The inspectors' review included the implementation of tube repair criteria and repair methods to verify that they were consistent with plant TSs and industry guidelines. The inspectors reviewed data to verify that the licensee had selected the appropriate tubes for plugging based on the required plugging criteria. The inspectors reviewed the tube plugging procedure and a sample of tube plugging results for tubes 2R41C102, 3R20C54, and 3R45C62, to determine if the licensee installed the tube plugs in accordance with the applicable procedures.

Furthermore, the inspectors interviewed licensee staff and reviewed a sample of inspection results for the inspection conducted in the secondary side internals of SGs 2 and 3, to verify that potential areas of degradation based on site-specific operating experience were inspected and appropriate corrective actions were taken to address degradation indications. This review included the results of Foreign Object Search and Retrieval activities in all four SGs and an evaluation for a potential loose part in the secondary side of each of the four SGs.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

Annual Review of Licensee Regualification Examination Results: On September 4, 2015, the licensee completed the annual regualification operating 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 evaluated simulator scenario V-RQ-SE-15601 and static simulator

exercise SS-28, administered to a licensed operating crew, on November 18, 2015, in accordance with the licensee's accredited requalification training program. The inspectors assessed the following attributes.

- 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 Unit 1 main control room on October 21, 2015 during the reactor startup following the refueling outage. The inspectors assessed the following attributes.

- 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 and the maintenance rule coordinator to assess the accuracy of performance deficiencies and extent of condition.

- Unit 1, turbine-driven AFW (TDAFW) pump, maintenance rule functional failure due to a signal inverter failure in the control system
- Unit 1, TDAFW pump, maintenance rule functional failure due to an inboard bearing oil gauge sightglass leak
- Unit 2, NSCW B train, maintenance rule functional failure due a 7300 printed circuit board card failure

b. Findings

Introduction: A Green self-revealing NCV of TS 5.4.1, "Procedures," was identified for the licensee's failure to implement replacement schedules for 7300 process protection and control (PP&C) system cards in accordance licensee fleet maintenance procedure. As a result, failure of a 7300 PP&C card rendered the Unit 2 B train of (NSCW) inoperable.

Description: On September 20, 2015, Unit 2 control room operators received a power supply failure alarm on the balance-of-plant process control cabinet. Operators noted the B train of NSCW tower return spray valve (2HV-1669A) had closed and bypass valve (2HV-1669B) had opened. The licensee declared the NSCW train inoperable and determined that the 7300 PP&C card for temperature switch TSH-1669/TSL-1669 had failed. The temperature switch provided input to the NSCW spray valve to open/close based on return water temperature. The 7300 PP&C card failure resulted in sending a close signal to the NSCW tower spray valve. As the spray valve would no longer open based on temperature, it affected the NSCW and ultimate heat sink capability for removing heat from safety-related components. The failed card was replaced and spray valve alignment restored at 0230 on September 21, 2015.

The licensee identified the card had been in service for approximately 25 years and failed due to component aging. Licensee fleet procedure NMP-MA-015, "7300 Process Protection and Control System Printed Circuit Board Management" version 1.0, required a "one-time" replacement of these cards prior to exceeding vendor recommended service life of 20 years. The licensee determined that since issuance of NMP-MA-015 in March 2011, the existing 7300 PP&C card maintenance strategy did not incorporate the replacement strategy in NMP-MA-015. Therefore, the card should have been replaced prior to failure.

Analysis: The failure to implement replacement schedules for 7300 PP&C system cards in accordance with maintenance procedure NMP-MA-015 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective in that the failure of the 7300 PP&C card affected the availability of the Unit 2B train of NSCW. The finding was evaluated using Exhibit 2, "Mitigating Systems Screening Questions" to IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012. The finding screened as having very low safety significance (i.e. Green) because it did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time. No cross-cutting aspect was assigned to this finding because the inspectors determined that the cause of the finding was not indicative of current licensee performance because the licensee has established a change management process that would prevent the Performance Deficiency from occurring.

Enforcement: Technical Specification 5.4.1 states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978.

Regulatory Guide 1.33, Appendix A, Section 9.b, "Procedures for Performing Maintenance," states, in part, that preventive maintenance schedules should be developed to specify...inspection or replacement of parts that have a specific lifetime. Licensee fleet maintenance procedure NMP-MA-015, "7300 Process Protection and Control System Printed Circuit Board Management" version 1.0, required a "one-time" replacement of 7300 PP&C cards associated with the NSCW tower return spray valves. Contrary to the above, since March 2011, the licensee did not establish and implement preventive maintenance replacement schedules for 7300 printed circuit board as specified in NMP-MA-015, including those associated with the NSCW tower return spray valves. As result, on September 20, 2015, the Unit 2 NSCW train B was rendered inoperable when a 7300 NAL card failed on the tower spray return valve. The licensee replaced the failed card and restored the affected train to operable status. The licensee scheduled replacement of NSCW spray valve 7300 cards for both NSCW trains in both units and conduct an extent of condition to identify 7300 cards that would require replacement per NMP-MA-015. Because this violation was of very low safety significance and was entered into the licensee's CAP as CR10124315, and CAR261373 this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000424, 425/2015004-01, Failure to Implement Preventive Maintenance Procedure for 7300 Process Protection and Control System Printed Circuit Board.)

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

a. Inspection Scope

The inspectors reviewed the maintenance activity 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, October 15-16, 2015 'YELLOW' Outage Risk Assessment Monitor (ORAM) risk condition due to mid-loop operation

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors selected the six operability determinations or functionality evaluations listed below for review based on the risk-significance of the associated components and systems. The inspectors reviewed the technical adequacy of the determinations to

ensure that technical specification operability was properly justified and the components or systems remained capable of performing their design functions. To verify whether components or systems were operable, the inspectors compared the operability and design criteria in the appropriate sections of the technical specification and updated final safety analysis report to the licensee's evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations.

- Unit 1, immediate determination of operability (IDO) for residual heat removal pump motor train 'A' due to bearing oil found on motor windings, CR10135701
- Unit 1, IDO for component cooling water (CCW) pump (11203P4005) for cracks found on the C-phase phenolic brace of the pump's breaker, CR10144495
- Unit 1, prompt determination of operability (PDO) for emergency diesel generator train 'A' due to a jacket water leak on the left bank no. 8 cylinder, CR10124867
- Unit 1, thermal sleeve guide funnel separation operability assessment, LTR-RIDA-15-208
- Unit 2, IDO for battery charger (2BD1CB) DC output breaker trip, CR10141719
- Units 1 and 2, functionality assessment for safety injection pump room flood wall penetrations due to higher design flood level, CAR 259751

Operator Work-Around Annual Review: The inspectors performed a detailed review of the licensee's operator work-around, operator burden, and control room deficiency lists for the station in effect the week of November 16, 2015 to verify that the licensee identified operator workarounds at an appropriate threshold and entered them in the corrective action program. The inspectors verified that the licensee identified the full extent of issues, performed appropriate evaluations, and planned appropriate corrective actions. The inspectors also reviewed compensatory actions and their cumulative effects on plant operation.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors verified that the plant modification listed below did not affect the safety functions of important safety systems. The inspectors confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems and components. The inspectors also verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition. Additionally, the inspectors evaluated whether system operability and availability, configuration control, post-installation test activities, and changes to documents, such as drawings, procedures, and operator training materials,

complied with licensee standards and NRC requirements. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications.

- LDCR 2015042, Technical Specification Bases change to allow use of WCAP-8648-A as an acceptable method of measuring axial offset using in-core detectors for the performance of surveillance requirement (SR) 3.3.1.3, 10/23/15

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 four 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.

- Maintenance Work Order (MWO) SNC715338, Replacement of AX4 relay on Unit 1 train A NSCW system return header spray valve, 1HV1668A, 10/13/15
- MWO SNC120828, Repack pressurizer spray bypass valve, 1201-U4-090, 10/22/15
- MWO SNC709656, Inside containment reactor coolant system sampling valve, 1HV3548, repair, 10/22/15
- MWO SNC726254, Disassembly, cleaning, and re-assembly of Unit 1 NSCW pump no. 6 motor cooler flow orifice, 11/7/15

The inspectors evaluated these activities for the following:

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

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

b. Findings

No findings were identified.



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

For the Unit 1 refueling outage, which continued from October 01, 2015 through October 21, 2015, the inspectors evaluated the following outage activities:

- refueling, heatup, and startup
- reactor coolant system instrumentation and electrical power configuration
- reactivity and inventory control
- decay heat removal and spent fuel pool cooling system operation
- containment closure

The inspectors verified that the licensee:

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

Routine Surveillance Tests

- 14666-1 Ver. 39, Train A Diesel Generator and ESFAS Test

In-Service Tests (IST)

- 14808B-1 Rev. 5.0, Train B Centrifugal Charging Pump and Check Valve IST and Response Time Test

Containment Isolation Valve Tests

- 14387-1 Rev. 7, Containment Penetration No. 87 ILRT Pressurization Line Local Leak Rate Test
- 14340-1 Ver. 10, Containment Penetration No. 40 Fire Protection Water Supply Local Leak Rate Test
- 24905-C Ver. 34, Personnel Airlock Leak Rate Test (Unit 1)

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 October 1, 2014, and September 30, 2015 to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data.

Cornerstone: Mitigating Systems

- safety system functional failures
- emergency AC power system
- cooling water system

b. Findings

No findings identified.

#### 4OA2 Problem Identification and Resolution (71152)

##### a. Inspection Scope

###### .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 Annual Follow-up of Selected Issues

The inspectors conducted a detailed review of condition report CR 10141951, "Entry into abnormal operating procedure 18000-C, "Pressurizer Spray, Safety, or Relief Valve Malfunction," due to lowering pressurizer pressure, 11/2/2015. The inspectors evaluated the following attributes:

- 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

###### .3 Semi-Annual Trend Review

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 trends, but also considered the results of inspector daily condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the 6-month period of July 2015 thru December 2015 although some examples extended beyond those dates when the scope of the trend warranted. The inspectors compared their results with the licensee's analysis of trends. Additionally, the inspectors reviewed the adequacy of corrective actions associated with a sample of the issues identified in the licensee's trend reports. The inspectors also reviewed corrective action documents that were processed by the licensee to identify potential adverse trends in the condition of structures, systems, and/or components as evidenced by acceptance of long-standing non-conforming or degraded conditions.

##### b. Findings

No findings were identified.

## 4OA5 Other Activities

Onsite Fabrication of Components and Construction of an Independent Spent Fuel Storage Installation (60853)a. Inspection Scope

The inspectors conducted a review of licensee and vendor activities in preparation for the concrete placement for the second small Independent Spent Fuel Storage Installation (ISFSI) pad upon which the HI-STORM (Holtec International Storage Module) FW (Flood and Wind) System will be sited to house spent fuel generated by the licensee. The inspectors walked down the construction area of the ISFSI pad and examined the rebar installation to verify that the rebar size, spacing, splice length, and concrete coverage on the top, side, and bottom complied to licensee-approved drawings, specifications, procedures, and other associated documents, and that compliance to applicable codes, the Certificate of Compliance (CoC), and Technical Specifications (TSs) was met. The inspectors also evaluated the concrete formwork installation for depth, straightness, and horizontal bracing to verify the overall dimensions and orientation for compliance to the licensee-approved drawings. The inspectors interviewed licensee and contract personnel to verify knowledge of the planned work. The inspectors also observed the actual concrete placement and vibration for the western half of the ISFSI slab, and observed tests for concrete slump and air content, temperature measurements, and the collection/preparation of cylinder samples for compression tests, to verify that the work was implemented according to approved specifications and procedures. The inspectors later returned to the freshly poured pad to verify that the pad was being cured according to approved specifications and Code requirements. Following completion of the 7-day and 28-day compression tests were completed by the independent laboratory, the inspectors reviewed the results to verify that the acceptance criteria were met. The inspectors noted that all tested samples satisfied the acceptance criteria.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exita. Exit Meeting

On January 25, 2016 the resident inspectors presented the inspection results to Mr. D. Myers and other members of plant staff. The inspectors confirmed that proprietary information was destroyed or returned following the completion of the inspection period.

#### 4OA7 Licensee-Identified Violations

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

- Title 10 CFR Part 50.54(q)(2), required, in part, a licensee shall follow and maintain the effectiveness of its emergency plan that meet the standards of 10 CFR 50.47(b). 10 CFR 50.47(b)(4), required, in part, a standard emergency classification and action level scheme, the bases of which include facility and system effluent parameters, is in use by the nuclear facility licensee. Contrary to the above, from April 2002 to September 2015, the licensee failed to maintain the effectiveness of its emergency plan. Procedure 43014-C, "Special Radiological Controls," version 53, specified non-conservative dose rates used to verify if RCS activity exceeded the threshold value for an emergency classification FA1 (Alert), loss of fuel clad barrier, in response to a chemical volume control system (CVCS) letdown process line high radiation alarm. The licensee entered this violation into the corrective action program as CR 10124780. The inspectors determined this violation was of very low safety significance (Green) because the finding did not constitute a failed risk-significant planning standard (RSPS).

ATTACHMENT: SUPPLEMENTARY INFORMATION

## **SUPPLEMENTARY INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee personnel:**

T. Baker, Security Manager  
C. Blackburn, SNC Steam Generator Engineer  
S. Briggs, Operations Director  
D. Brown, Corporate Outage Services  
D. Caldwell, ISFSI Project Manager  
J. Dixon, Radiation Protection Manager  
B. Evans, Corporate Outage Services  
G. Fechter, Welding Engineer  
T. Fowler, Chemistry Manager  
E. Groves, Corporate ISI Engineer  
G. Gunn, Regulatory Affairs Manager  
M. Henson, Operations Training Manager  
S. Kowalski, Systems Engineering Manager  
K. Morrow, Licensing Engineer  
D. Myers, Plant Manager  
R. Page, ISFSI Project  
W. Phillips, Dry Cask Storage - Corporate  
J. Santana, Programs Engineer  
T. Smith, SNC NDE Level III/QDA  
D. Stiles, Training Director  
J. Summy, Engineering Director  
D. Sutton, Manager of Site Projects  
K. Taber, Site Vice-President  
C. Thomas, Corporate Engineer  
J. Thomas, Work Management Director  
K. Walden, Licensing Engineer  
S. Waldrup, Regulatory Affairs Manager

#### **NRC**

J. Rivera-Ortiz, Senior Reactor Inspector

### **LIST OF REPORT ITEMS**

#### **OPEN AND CLOSED**

NCV 05000424/425/2015004-01

Failure to Implement Preventive Maintenance Procedure for 7300 Process Protection and Control System Printed Circuit Board (Section 1R12)

## LIST OF DOCUMENTS REVIEWED

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

#### Procedures

11901-1 Rev. 17.2, Heat Tracing System Alignment, dated 11/26/15

11901-2 Rev. 12.3, Heat Tracing System Alignment, dated 10/27/15

#### Completed Procedures

11889-C Rev. 25, Severe Weather Checklist, completed on 11/18/15

#### Other

Vogtle 1 and 2 Site Certification for 2016 Winter Readiness letter, dated 12/9/15

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

#### Procedures

14495-1 Rev. 7.1, Auxiliary Feedwater System Flowpath Verification

13610-1 Ver. 51.1, Auxiliary Feedwater System – Checklist 2, Auxiliary Feedwater System Alignment for Standby Readiness, completed on 10/22/15

13610-2 Rev. 47.1, Auxiliary Feedwater System

#### Drawings

1X4DB161-1, P&I Diagram Rev. 46.0, Auxiliary Feedwater System, System No. 1302

1X4DB161-2, P&I Diagram Rev. 28.0, Auxiliary Feedwater System, System No. 1302

1X4DB161-3, P&I Diagram Rev. 42.0, Auxiliary Feedwater System, System No. 1302

2X4DB161-1, P&I Diagram Rev. 37.0, Auxiliary Feedwater System Condensate Storage & Degasifier System, System No. 1302

2X4DB161-2, P&I Diagram Rev. 25.0, Auxiliary Feedwater System, System No. 1302

2X4DB161-3, P&I Diagram Rev. 38.0, Auxiliary Feedwater Pump System, (Aux Feedwater Pump Turbine Driver) System No. 1302

#### Other

System Health Report for Unit 2 – 1302A, Auxiliary Feedwater System (1st Qtr – 2014 to 3rd Qtr 2015)

### **Section 1R05: Fire Protection Annual/Quarterly**

#### Procedures

92825A-1 Rev. 5.1, Zone 125A – Control Building – Level 3 Fire Fighting Preplan

92826A-1 Rev. 3.1, Zone 126A – Control Building – Level 3 Fire Fighting Preplan

92835-1 Rev. 4.1, Zone 135 – Control Building – Level 3 Fire Fighting Preplan

92843-1 Rev. 3.0, Zone 143 – Diesel Generator Building Electrical Tunnel A – Level B Fire Fighting Preplan

92845-1, Rev. 1.3, Zone 145 – Tunnels 1T2A, 1T3A, and 1T5A Fire Fighting Preplan

92845-2, Rev. 0.2, Zone 145 – NSCW Cooling Tower 2A Mechanical and Electrical Tunnels 2T2A, 2T3A, and 2T5A Fire Fighting Preplan

92846-1, Rev. 2.0, Zone 146 – Tunnels 1T2B, 1T3B, and 1T5B Fire Fighting Preplan

92846-2, Rev. 1.0, Zone 146 – NSCW Cooling Tower 2B Mechanical and Electrical Tunnels 2T2B, 2T3B, and 2T5B Fire Fighting Preplan

92846A-1, Rev. 0.2, Zone 146A – NSCW and Electric Steam Boiler Building – Tunnel Fire Fighting Preplan  
 92846A-2, Rev. 0.2, Zone 146A – Tunnel 2T3B – DG 2B to Auxiliary Building Fire Preplan NSCW and Electric Steam Boiler Building – Tunnel Fire Fighting Preplan  
 92853-2 Rev. 0.2, Zone 153 – Control Building – Level B Fire Fighting Preplan  
 92861-1 Rev. 3.0, Zone 161 – Diesel Generator Building Fire Fighting Preplan  
 92863-1 Rev. 3.2, Zone 163 – Diesel Generator Building– Train A DFO Day Tank Fire Fighting Preplan  
 92878-1 Rev. 2.2, Zone 178 – Control Building – Level 3 Fire Fighting Preplan  
 92879-1 Rev. 4.1, Zone 179 – Control Building – Level 3 Fire Fighting Preplan  
 92880-1 Rev. 2.2, Zone 180 – Control Building – Level 3 Fire Fighting Preplan  
 92930F-1 Rev. 3.2, Zone 530 – North Firewater Pump house –Fire Fighting Preplan  
 92931B-1 Rev. 3.2, Zone 531 – South Firewater Pump house –Fire Fighting Preplan  
 96860A-1, Rev 1.0, Zone 160A – NSCW Pumphouse – Train A Fire Fighting Preplan  
 96860A-2, Rev 1.2, Zone 160A – NSCW Pump House – Train A Fire Fighting Preplan  
 96860B-1, Rev 0.2, Zone 160B – NSCW Pumphouse – Train B Fire Fighting Preplan  
 96860B-2, Rev 1.2, Zone 160B – NSCW Pump House – Train B Fire Fighting Preplan

### **Section 1R08: Inservice Inspection Activities**

#### Procedures

26260-C, Hancock Series 7440 Line Check Valve Maintenance, Rev. 8  
 26560-C, Valcor Solenoid Globe Valve Maintenance, Version 31  
 GEN-25, VEGP Welding Manual – Welding Procedure Specification, ASME Appendix-C, Part 1, Rev 15.1  
 NMP-ES-004-GL01, Steam Generator Program Strategic Plan, Version 12.0, November 2013  
 NMP-ES-019, Boric Acid Corrosion Control Program, Version 11  
 NMP-ES-024-201, Visual Examination (VT-1), Version 3.1  
 NMP-ES-024-208, Visual Examination of Reactor Vessel Head Penetrations and Base Material (Remote and Direct), Version 5.1  
 NMP-ES-024-401, Magnetic Particle Examination, Version 10.0  
 NMP-ES-024-504, Manual Ultrasonic Examination of Bolts and Studs (Appendix VIII), Version 4.3  
 NMP-ES-024-513, Manual Ultrasonic Examination of Nozzle inner Radius (Non-Appendix VIII), Version 7.2  
 NMP-ES-024-516, Manual Ultrasonic Examination of Pressure Vessel Welds (Non-Appendix VIII), Version 4.3

#### Drawings:

1K4-1201-029-02, Reactor Coolant System Fabrication Isometric CTMT. BLDG. Area 4D Level 1, A &B, Ver. 28  
 1K4-1301-155-02, Main Steam System Fabrication Isometric CTMT. BLDG. Area 4A,4D, LVL. C & B. Rev. 15  
 1X4DB112, P&I Diagram, Reactor Coolant System,  
 1X4DB159-1, P&I Diagram, Main Steam System, System No.1301, Version 38  
 1X4DL4D003, Containment Building – Pining Area 4D – Level A Plan – ELEV. 206'-0" to ELEV. 220'-0", Version 20



Self-Assessments:

Check-In Self-Assessment (CISA), ISI for NRC Routine Baseline in the iR19 and 2R18 Refueling Outages, dated June 24, 2015  
 Focused Area Self-Assessment of the Steam Generator Program, dated September 9, 2011, (Tracking CR 347734)  
 NMP-GM-003-002, Boric Acid Corrosion Control Program, 1/8/2014  
 NMP-GM-003-F18, ISI Assessment for NRC Routine Baseline Inspections in the 1R19 and 2R18 Refueling Outages, 6/12/2015

Work Orders/Work Requests

WO SNC127987, Boric Acid on bonnet of CVCS Excess Letdown Isolation Valve, 2/9/2011  
 WO SNC341688, Boric Acid on Safety Injection RCS Loop 4 Needle Valve, 10/25/2011  
 WO SNC396173, Disassemble/Inspect/Reassemble Check Valve per 26260-C 11208U4033, 9/26/2015  
 WO SNC561986, Boric Acid Leak on Safety Injection RCS Loop 2 Needle Valve, 3/19/2014  
 WO SNC578404, Boric Acid on SIS Accumulator Loop 4 Local Sample Line, 6/4/2014  
 WO SNC659721, Butt Weld on valve 1HV9556B, 9/27/2015  
 WO SNC659721-30, Rebuild valve 1HV9556B not opening, 9/23/2015  
 WO SNC680435, Boron on Safety Injection to RWST, 7/1/2015  
 WO SNC707245, Boric Acid on Safety Injection Accumulator 1 Check Valve Test, 9/16/2015  
 WO SNC707247, Boric Acid on SIS Accumulator Loop 1 Water Level Drain, 9/16/2015

BACC CRs

349412, 788513, 821690, 10125365, 10125976, 10127584, 10128381, 10128391, 10128393, 10128399, 10128409

CRs Evaluated to 10 CFR Part 50, Appendix B, Criterion XVI

10120987, 10120989, 10120990, 10120991, 10120996, 10120999, 10121002, 10121004, 10121005, 10121007, 10121008, 10121010

NDE Examiner Qualifications:

Curtis-Wright Personal Certification Statement: Manfred Grell  
 Curtis-Wright Certification of Visual Acuity: Manfred Grell  
 EPRI Performance Demonstration, Procedure: PDI-UT-8: Paul S. Blecha  
 EPRI Performance Demonstration, Procedure: PDI-UT-10: Paul S. Blecha  
 Record of Welder Performance Qualification Test, ASME Section IX: D. Durrence, A. Allen  
 Sonic Systems International, Inc Certificate of Qualification: Mitchell W. Parker, Paul S. Blecha  
 Sonic Systems International, Inc Visual Acuity: Mitchell Parker, Paul S. Blecha  
 Southern Company NDE Examiner Certification Review: Mitchell W. Parker, Paul S. Blecha, J. Eric Aycock, Manfred Grell

Miscellaneous Documents:

Applied Test Systems Certificate of Compliance SAP# 103584, 1" Angle Beam A20268, 10/1/2003  
 DOEJ-VR1071563801-M001, Effective Degradation Years Determination for Vogtle Unit 1 Reactor Pressure Vessel Closure Head (Outage 1R14), 2/18/2008  
 Exelon Generation Certificate of Calibration # 0010889816, Exttech Light Meter SNJ VP-9016, 5/28/2015

Exelon Generation Certificate of Calibration #0010900962, Raytek IR Thermometer Serial #29600135, 7/13/2015

Georgia Power Certification No. VP-4-9016:1432812444, Digital Light Meter 401025, 5/29/2015

Magnaflux Purchase Order 91-6007536, Certification of 8A Red Powder Batch No. 91F054, 7/3/1991

Magnaflux, Certification of Spotcheck Developer, SKD-S2, Batch# 13M24K, 1/3/2014

Magnaflux, Certification of Spotcheck, SKC-S, Batch# 14L01K, 11/13/2014

Magnetic Particle Examination, Report No. S15V1M005, 14" Pressurizer Surge Nozzle Weld to Lower Head, 10/1/2015

MRS-TRC-2278, Use of Qualified Techniques, 1R19 Refueling Outage, Westinghouse Nuclear Services Division, September 2015

Liquid Penetrant Examination Record, Report #686, SNC396173, 9/26/2015

Liquid Penetrant Examination Record, Report #695, SNC659721, 10/14/2015

SG-SGMP-14-13, Vogtle 1R18 Steam Generator Condition Monitoring and Operational Assessment, June 2014, Revision 0

SG-SGMP-15-12, Vogtle 1R19 Steam Generator Degradation Assessment, September 2015, Revision 0

SII006-10-07-21590-1, Certified Test Result; Ultragel II-10225, Sonotrace 40-10243, Sonotrace 30-10242, Sonotrace 20-10241, 7/12/2010

Site-Specific Performance Demonstration (SSPD) Training Manual, Vogtle Unit 1 (GAE), 1R19 Refueling Outage, Revision 0

Technical Evaluation #284012, Boric Acid Leakage/Residue on 11204U4117, 10/31/2011

Traveler #15012, Section XI Repair/ Replacement Traveler 1-1208-U4-033 Check Valve, 4/27/2015UT Calibration Examination, Report No. S15V1U054, 14" Pressurizer Surge Nozzle Inner Radius, 10/1/2015

UT Calibration Examination, Report No. S15V1U087, 14" Pressurizer Surge Nozzle Weld to Lower Head, 10/5/2015

Visual Examination for Leakage (VT-2), Report No. S15V1V182, Vessel Closure Head Exterior, 9/29/2015

Visual Examination of Pressure Retaining Bolting (VT-1), Report No. S15V1V183, Reactor Vessel Head Closure Washers, 10/1/2015

Visual Examination of Pressure Retaining Bolting (VT-1), Report No. S15V1V184, Reactor Vessel Head Closure Nuts, 10/1/2015

Visual Examination of Reactor Vessel and Internals (VT-3), Report No. S15V1V180, Vessel Closure Head Interior (FSAR 5.3.3.7), 9/25/2015

Westinghouse Letter GP-19352, Transmittal of LTR-CDA-15-21 and EVAL-15-51 related to the Evaluation of Foreign Objects in the Secondary Side of Vogtle Unit 1 Steam Generators – Fall 2015 - 1R19 Outage, dated October 15, 2015

Westinghouse Letter GP-19353, Transmittal of SG-SGMP-15-17, "Vogtle 1R19 Steam Generator Condition Monitoring and Operational Assessment", dated October 16, 2015

Westinghouse Letter GP-19337, Revision 1, Transmittal of LTR-SGMP-15-41, Revision 1, Vogtle 1R19 Fall 2015 Steam Generator Secondary Side Visual Inspection Plan, dated September 17, 2015

WPCS No. 1R19016, Weld Process Control Sheet, GTSM-88-O-1, 9/27/2015

WPCS No. 1R19058, Weld Process Control Sheet, GTSM-88-O-1, 9/27/2015

**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

Procedures

12003-C Rev. 57.1, Reactor Startup (Mode 3 to Mode 2)  
 12004-C Rev.116.1, Power Operation Mode 1  
 NMP-EP-110 Ver. 8.1, Emergency Classification Determination and Initial Action  
 NMP-EP-110-GL03 Ver. 5.2, VEGP EALs – ICs, Thresholds Values and Basis  
 NMP-EP-111 Ver. 11.0, Emergency Notifications

Other

Static Simulator Exercise SS #28 Ver. 0, LOCT Segment 20156  
 V-RQ-SE-15601 Ver. 1.0, Simulator Exercise Guide

**Section 1R12: Maintenance Effectiveness**

CAR261373  
 CRs 10119740, 0115572, 10124315, 10124363, 10129706  
 TEs 933540, 936054, 936010  
 Drawing 2X3D-BD-K05W Ver. 10, Elementary Diagram NSCW System – 2HV-1669A  
 RER C071859601, Long Range Plan, 7300 Process Protection and Control System, Rev. 1.0

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

10032-C, Version 11, Outage Risk Assessment Monitoring  
 11899-1 Rev. 25, RCS Draindown Configuration Checklist  
 12008-C Rev 31.2, Mid-Loop Operations

Other

1R19 Refueling Outage Defense-in-Depth Assessment Notes, 10/15/15  
 1R19 Refueling Outage Defense-in-Depth Assessment Notes, 10/16/15  
 1R19 Cold Midloop Contingency Plan 10/15/15

**Section 1R15: Operability Determinations and Functionality Assessments**Work Orders

SNC139185, Unit 2 2BD1CB battery charger 54-month calibration, 11/2/15  
 SNC605598, A train RHR pump 1 motor megger, scheduled 3/12/17  
 SNC613540, Unit 2 2BD1CB battery charger 18-month load test, 11/3/15  
 SNC723975, Unit 2 2BD1CB battery charger DC output breaker trip test, 11/1/15

Procedures

10025-C Rev 3.0, Work Around Program  
 13145A-2 Ver. 6.3, Diesel Generator Train A, Section 4.4.14 – Swapping Compressors to  
 Opposite Air Receivers  
 17035-1 Ver. 36, Annunciator Response Procedures for ALB 35 on EAB Panel  
 55029-C, Calculation of Setpoints for 125V DC Molded Case Circuit Breakers and Selection of  
 Heater Coil Sizes for Thermal Overload Protection, Rev. 10.1

Drawings

1X4DB170-1 Ver. 46.0, P&I Diagram - Diesel Generator System Train A, System No. 2403  
 2X4DB170-1 Ver. 40.0, P&I Diagram - Diesel Generator System Train A, System No. 2403

Other Records

10 CFR 50.59 Screening/Evaluation, Seismic category 1 firewater as standpipe makeup for 1A EDG compensatory action, Rev. 1, CR10124867  
 AX4AJ01-00510 Ver. 24.0, Standby Diesel Generator Diesel Engine Parts Manual  
 Engineering Active Temporary Modifications list, updated 10/29/15  
 LTR-RIDA-15-208, Subject: Vogtle Unit 1 Thermal Sleeve Guide Funnel Separation Operability Assessment, 10/09/15  
 Operations Aggregate Impact Index Dashboard for week of 11/16/15  
 PDO for 1A EDG jacket water leak at the left bank No. 8 cylinder, PDO #1-15-001 SCL02960  
 WCAP-16911-P, Reactor Vessel Head Thermal Sleeve Wear Evaluation for Westinghouse Domestic Plants July 2008  
 CRs 10119145, 10124867, 10132823, 10133068, 10133401, 10135701, 10141719, 10144495, 10146141  
 CARs 259791, 259802

**Section 1R18: Plant Modifications**Procedures/Calculations/Engineering Documents/Miscellaneous

LDCR 2015042, Clarification to TS Bases to allow use of WCAP-8648-A as an acceptable method of measuring axial offset using incore detectors for the performance of SR 3.3.1.3, 10/23/15  
 NRC Safety Evaluation Report for WCAP-8648  
 WCAP-8648-A, EXCORE Detector Recalibration Using Quarter-Core Flux Maps, February 1979

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

14150A-1 Ver. 4.0, Train A NSCW Fan/Spray Valve Surveillance  
 14324-1 Rev. 10, Containment Penetration No. 24 RCS Hot Leg Sample Local Leak Rate Test  
 14960-1 Rev. 4.1, Pressurizer Continuous Spray Flow Verification  
 24904-C Rev. 5.5, Modes 1-4 Containment Leakage Totalization  
 35515-1 Ver. 14, Operation of the Unit 1 Nuclear Sampling System - Liquid  
 83308-C, Testing of Safety-Related NSCW System Coolers, Unsatisfactory results – 11/5/2015  
 NMP-MA-014-001 Ver. 3.0, Post Maintenance Testing Guidance

Completed Procedures

14324-1 Rev. 10, Containment Penetration No. 24 RCS Hot Leg Sample Local Leak Rate Test, completed on 10/22/15  
 14960-1 Rev. 4.1, Pressurizer Continuous Spray Flow Verification, completed on 10/21/15  
 83308-C, Testing of Safety-Related NSCW System Coolers, Satisfactory PMT results - 11/7/15

Work Orders

SNC715338, Replacement of AX4 relay on 1A NSCW return header spray valve, 10/13/2015  
 SNC726254, Disassembly, cleaning, and re-assembly of Unit 1 NSCW pump no. 6 motor cooler flow orifice  
 SNC120828, Repack Pressurizer Spray Bypass Valve 1201-U4-090, 10/22/2015  
 SNC709656, Valve 1HV3548 repair, 10/22/2015

Drawings

1X3D-BD-K05U Ver. 16.0, Elementary Diagram – Nuclear Service Water System 1HV-1668A  
 1X4DB112, Rev. 36.0, P&I Diagram – Reactor Coolant System, System No. 1201  
 1X4DB133-1 Ver. 54.0, P&I Diagram – Nuclear Service Cooling Water System, System No.  
 1202  
 1X4DB133-2 Rev. 60, P&I Diagram Nuclear Service Cooling Water System, System No. 1202  
 1X4DB140-1 Ver. 46.0, P&I Diagram – Nuclear Sampling System – Liquid, System No. 1212  
 1X5AC01-00355, Rev. 6, Dimensional Drawing

CRs 10143808, 10132643, 10136510

**Section 1R22: Surveillance Testing**Procedures

14340-1 Rev. 10, Containment Penetration No. 40 Fire Protection Water Supply LLRT  
 14387-1 Rev. 7, Containment Penetration No. 87 ILRT Pressurization Line LLRT  
 14387-1 Rev. 7.0, Containment Penetration No. 87 ILRT Pressurization Line LLRT  
 14808B-1 Rev. 5.0, Train B CCP and Check Valve IST and Response Time Test  
 24905-C Ver. 34, Personnel Airlock Leak Rate Test (Unit 1)

Completed Procedures

14300-C Ver. 2, Containment Type B & C Leakage Totalization, Completed 10/19/15  
 14340-1 Rev. 10, Containment Penetration No. 40 Fire Protection Water Supply Local Leak  
 Rate Test, Completed on 10/6/15 and 10/13/15  
 14387-1 Rev. 7, Containment Penetration No. 87 ILRT Pressurization Line Local Leak Rate  
 Test, Completed on 10/2/2015  
 14387-1 Rev. 7.0, Containment Penetration No. 87 ILRT Pressurization Line Local Leak Rate  
 Test, Completed on 10/2/15  
 14666-1 Ver. 39, Train A Diesel Generator and ESFAS Test, Completed on 10/10/15  
 14808B-1 Rev. 5.0, Train B Centrifugal Charging Pump and Check Valve IST and Response  
 Time Test, Completed on 10/15/15

Drawings

1X3AE13-00072-3 Ver. 2.0, Diesel Generator SFS Undervoltage Panel Assembly (SHT 3 of 4)  
 1X4DB132 Ver. 18.0, P&I Diagram – Miscellaneous Leak Detection  
 1X4DB174-4 Ver. 24.0, P&I Diagram – Fire Protection Water Systems, System No. 2301

Work Orders

SNC394215, 1A Diesel/ESFAS 18-Month Actuation Test, 10/17/15  
 SNC437375, Investigate Sequencer 1A Issues During A Tran ESFAS Testing, 10/30/15  
 SNC456461, 18-Month Personnel Airlock LLRT, completed 9/13/15

Other

ASME OM Code-2001, Code for Operation and Maintenance of Nuclear Power Plants  
 ASME OMA Code-2002, Addenda to ASME OM CODE-2001 Code for Operation and  
 Maintenance of Nuclear Power Plants

ASME OMB Code-2003, Addenda to ASME OM CODE-2001 Code for Operation and Maintenance of Nuclear Power Plants  
 CRs10087498, 10091450, 10132663, 10135204  
 TE937959, Second load shed signal detected during ESFAS testing, 10/14/15

### **Section 4OA1: Performance Indicator Verification**

#### **Bases Documents:**

NRC Mitigating System Performance Index (MSPI) Basis Document – Vogtle Electric Generating Plant Units 1 and 2, Ver. 7

#### **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**

Corrective Action Program Condition Report Database – List of condition reports for Systems 1202, 1204, and 2403 (both units) between 10/1/2014 – 09/30/2015

MSPI Evaluation Form associated with CR10124315 for a 7300 card failure of the 2B NSCW spray valve, 9/21/15

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 10/1/2014 – 09/30/2015

#### **Monthly MSPI Derivation Reports**

Unit 1, MSPI Cooling Water Systems, Unavailability Index (UAI), 10/2014 – 09/2015

Unit 1, MSPI Cooling Water Systems, Unreliability Index (URI), 10/2014 – 09/2015

Unit 1, MSPI Emergency AC Power System, Unavailability Index (UAI), 10/2014 – 09/2015

Unit 1, MSPI Emergency AC Power System, Unreliability Index (URI), 10/2014 – 09/2015

Unit 2, MSPI Cooling Water Systems, Unavailability Index (UAI), 10/2014 – 09/2015

Unit 2, MSPI Cooling Water Systems, Unreliability Index (URI), 10/2014 – 09/2015

Unit 2, MSPI Emergency AC Power System, Unavailability Index (UAI), 10/2014 – 09/2015

Unit 2, MSPI Emergency AC Power System, Unreliability Index (URI), 10/2014 – 09/2015

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

CRs 10141951, 10143777, 10144105

#### **Procedures/Calculations/Engineering Documents/Miscellaneous**

14960-1 Pressurizer Continuous Spray Flow Verification, Completed 10/21/15

18000-C Rev. 5, Pressurizer Spray, Safety, or Relief Valve Malfunction

1X4DB112 Rev. 43.0, P&I Diagram – Reactor Coolant System – System No. 1201

SNC120828, Repack of pressurizer bypass spray valve 1201-U4090

SNC285899, Repack of pressurizer bypass spray valve 1201-U4091

### **Section 4OA5: Other Activities**

Onsite Fabrication of Components and Construction of an Independent Spent Fuel Storage Installation (60853)

Procedures

25016-C, Earthwork, Version 9.1

25026-C, Installation of Concrete, Version 4.1

Specifications

VC-S-11-003, Furnishing and Placing Concrete for the Independent Spent Fuel Storage Installation (ISFSI) Support Pad

X2AP01, Division C2, Section C2.2, Earthwork and Related Site Activities, Revision 20

X2AP01, Division C3, Section C3.2, Forming, Placing, Finishing, and Curing of Concrete, Revision 30

X2AP01, Division C3, Section C3.4, Placing Reinforcing Steel, Revision 13

X2AP01, Division C3, Section C3.9, Purchase of Ready-Mixed Concrete, Revision 1

X4AZ11, Independent Spent Fuel Storage and Transportation System, Version 5.0

Other

Brasfield and Gorrie Inspection and Test Report for Rebar To Be Used in ISFSI Small Pad, dated September 9, 2015

Certificate of Calibration for scales used at Evans Concrete batch plant, dated June 17, 2015

Evans Concrete material certifications for Argos' cement (dated January 8, 2015), including the Argo cement Mill Test Report, supplier's certification for boral fly ash, supplier's material certification for coarse aggregate, C. B. Sand Company certification for fine aggregate (sand), and Euclid Chemical product certification for liquid admixtures

Personnel Certifications for B. Baynham, and C. Lowry

Receipt Inspection Checklist for Rebar to be Used in ISFSI Small Pad, PO No. SNG43931-0001, dated 9-14-2015

Receipt Inspection Checklist for Rebar to be Used in ISFSI Small Pad, PO No. SNG43931-0001, dated 9-18-2015

Unit 1, ISFSI Concrete Post-Placement Inspection, Revision 2

**Section 40A7: Licensee-Identified Violations**

Procedures

14100-1 Ver. 26.2, Annunciator Response Procedure for the Process and Effluent Radiation Monitoring System (RMS)

43014-C Ver. 53.0, Special Radiological Controls

Other

REA 00-VAA136, Vogtle Electric Generating Plant Units 1 and 2 – PASS Elimination, 4/4/2002  
Standing Order No. C-2015-004, Compensatory Actions for high radiation level alarm on 1-RE-48000, 10/15/15

Vogtle Electric Generating Plant Unit 1 and 2 Emergency Plan  
CR 10124780