



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

November 6, 2015

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION
REPORT 05000424/2015003 AND 05000425/2015003

Dear Mr. Taber:

On September 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 1 and 2. On October 27, 2015, the NRC inspectors discussed the results of this inspection with Mr. Scott Briggs and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. Two of these findings involved violations of NRC requirements. Further, inspectors documented licensed-identified violations which were determined to be of very low safety significance in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Vogtle Electric Generating Plant.

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

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 Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure:
IR 05000424/2015003 and 05000425/2015003
w/Attachment: Supplementary Information

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Letter to B. Keith Taber from Shane Sandal dated November 6, 2015

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION
REPORT 05000424/2015003 AND 05000425/2015003

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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.: 05000424/2015003 and 05000425/2015003

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

Facility: Vogtle Electric Generating Plant, Units 1 and 2

Location: Waynesboro, GA 30830

Dates: July 1, 2015, through September 30, 2015

Inspectors: M. Cain, Senior Resident Inspector
A. Alen, Resident Inspector
B. Caballero, Senior Operations Engineer (Section 1R11)
N. Lacy, Operations Engineer (Section 1R11)
W. Pursley, Health Physicist (Sections 2RS6, 4OA1)
J. Rivera, Health Physicist (Sections 2RS1, 2RS7, 4OA1)
J. Griffis, Health Physicist (Section 2RS8)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000424/2015003, 05000425/2015003; 07/01/2015 – 09/30/2015; Vogtle Electric Generating Plant, Units 1 and 2; Licensed Operator Requalification Program and Licensed Operator Performance, Radiological Hazard Assessment and Exposure Controls

The report covered a 3-month period of inspection by resident inspectors and regional inspectors. Three findings are documented in this report. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated April 29, 2015. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas" dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Mitigating Systems Cornerstone

- Green. An NRC-identified Non-cited Violation (NCV) of 10 CFR 55.49, "Integrity of examinations and tests," was identified for the licensee's failure to adhere to requirements of NMP-TR-424, License Operator Continuing Training Exam Development, Version 3.1. NMP-TR-424 was the procedure that the licensee used to implement industry standard ACAD 07-001, Guidelines for the Continuing Training of Licensed Personnel. ACAD 07-001 is a methodology which can be used to fulfill 10 CFR 55.59(c), "Requalification program requirements" and 10 CFR 55.4, "Systems approach to training (SAT)." This violation has been entered into the licensee's corrective action program (CAP) as condition report (CR) 10115484.

The inspectors determined that the licensee's failure to adhere to overlap standards in NMP-TR-424 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective in that the failure to adhere to examination overlap standards adversely affected the quality of the administration of the operating exams. The finding was determined to be of very low safety significance (Green) because there was no evidence that a licensed operator had actually gained an unfair advantage on an examination required by 10 CFR 55.59. The finding was directly related to the cross-cutting aspect of procedure adherence of the cross-cutting area of Human Performance because the training staff did not follow the guidance for all licensed operators' 2014 annual operating exam [H.8]. (Section 1R11)

- Green. An NRC-identified finding was identified when between 20 and 40 percent of the written examination questions administered to licensed operators during the biennial requalification examination did not meet the requirements of NMP-TR-424, "Licensed Operator Continuing Training Exam Development," and NUREG-1021, "Operator Licensing Examination Standards For Power Reactors," Revision 10.

The inspectors determined that the failure to ensure that biennial written examinations met the qualitative standards for written examinations was a performance deficiency (PD). The PD was more than minor because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective in that the quality of biennial written examinations potentially impacted the licensee's ability to appropriately evaluate licensed operators. The significance of the finding was determined to be Green because between 20 and 40 percent of the questions reviewed did not meet the standard. No cross-cutting aspect was identified that would be considered a contributor to the cause of the finding. (Section 1R11)

Occupational Radiation Safety Cornerstone

- Green. A self-revealing NCV of Technical Specification (TS) 5.7.1, "High Radiation Area," for an unauthorized entry into a high radiation area (HRA). The radiological aspects were not discussed in the pre-job brief, the health physics (HP) technician in containment did not challenge the crew as to whether or not they received their HRA briefing, and the crew did not follow adequate radiological safety practices, such as reading instructions on the HRA posting prior to entry and not leaning against piping. The licensee entered this issue into the CAP as CR 870060

The entry into a HRA without meeting the entry requirements specified in T.S. 5.7.1 was a performance deficiency. This performance deficiency was more than minor because it was associated with the Occupational Radiation Safety cornerstone attribute of Human Performance and adversely affected the cornerstone objective in that workers who enter HRAs with inadequate knowledge of current radiological conditions could receive unintended occupational exposures. The finding was evaluated using the Occupational Radiation Safety Significance Determination Process and determined to be of very low safety significance (Green). This finding does not involve a cross-cutting aspect because it is not current license performance.

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 started the report period at full rated thermal power (RTP) and was shut down for a planned refueling outage on September 20, 2015. The unit remained shut down for the remainder of the report period.

Unit 2 remained at RTP for the duration of the reporting period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial Walkdown: The inspectors verified that critical portions of the following four selected systems or trains were correctly aligned by performing partial walkdowns. The inspectors selected systems for assessment because they were a redundant or backup system or train, were important for mitigating risk for the current plant conditions, had been recently realigned, or were a single-train system. The inspectors determined the correct system lineup by reviewing plant procedures and drawings. Documents reviewed are listed in the Attachment.

- Unit 1 "A", "B", and "C" trains of auxiliary feedwater (AFW) system as each individual train was out of service (OOS) for planned in-service inspections.
- Unit 1 train "A" of component cooling water (CCW) and residual heat removal (RHR) while the respective "B" trains were OOS due to planned maintenance outage.
- Unit 1 train "B" Safety Injection (SI) while train "A" was OOS for planned maintenance outage.
- Unit 1 train "A" containment spray (CS) system while train "B" CS system was OOS due to a planned maintenance outage.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ)

a. Inspection Scope

Quarterly Inspection: The inspectors evaluated the adequacy of selected fire plans by comparing the fire plans to the defined hazards and defense-in-depth features specified in the fire protection program. In evaluating the fire plans, the inspectors assessed the following items:

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

The inspectors toured the following five fire areas to assess material condition and operational status of fire protection equipment. Documents reviewed are listed in the Attachment.

- Unit 1 RHR and CS pump rooms, fire zones 4, 5, 9, and 10
- Units 1 and 2 rod control switchgear rooms, fire zones 59, 68, 69, and 75
- Unit 2 "A" train emergency diesel generator (EDG) building, fire zones 161 and 163.
- Unit 2 EDG fuel oil storage tank building, fire zones 165 and 166
- Unit 2 SI and auxiliary component cooling water (ACCW) pump rooms, and auxiliary building "A" and "B" level penetration areas, fire zones 26B, 30, 31, 32, and 33

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 1, SI trains "A" and "B" pump rooms
- Unit 2, SI trains "A" and "B" pump rooms

Underground Cables: The inspectors reviewed related flood analysis documents and inspected the areas listed below containing cables whose failure could disable risk-significant equipment. The inspector directly observed the condition of cables and cable support structures and, as applicable, verified that dewatering devices and drainage systems were functioning properly. In addition, the inspectors verified the licensee was identifying and properly addressing issues using the corrective action program. Documents reviewed are listed in the Attachment. Cable Pull Boxes: 1NE7GKKEM62, 1NE7GLKEM63, 1NE9NAKSM72

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A)a. Inspection Scope

Annual Review: The inspectors verified the readiness and availability of the Unit 2 train "B" spent fuel heat exchanger to perform its design function by observing performance tests or reviewing reports of those tests, verifying the licensee uses the periodic maintenance method outlined in Generic Letter 89-13, "Service Water System Problems Affecting Safety Related Equipment," observing the licensee's heat exchanger inspections and verifying critical operating parameters through direct observation or by reviewing operating data. Additionally, the inspectors verified that the licensee had entered any significant heat exchanger performance problems into their corrective action program and that the licensee's corrective actions were appropriate. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

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

Resident Inspector Quarterly Review of Licensed Operator Requalification: The inspectors observed an evaluated simulator scenario administered to an operating crew as part of the annual requalification operating test required by 10 CFR 55.59, "Requalification." 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 on September 20, 2015, while a reactor shutdown was being performed on Unit 1. 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

Biennial Licensed Operator Requalification Review: The inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the facility licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1985, "American National Standard for Nuclear Power Plant Simulators for use in Operator Training and Examination." The inspectors observed two crews during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, simulator modification request records, simulator performance test records, operator feedback records, licensed operator qualification records, remediation plans, watch standing records, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed are listed in the Attachment.

b. Findings

.1 NRC Annual Operating Examinations Exceeded Overlap Standards

Introduction: A Green NRC-identified NCV of 10 CFR 55.49, "Integrity of examinations and tests", was identified for the licensee's failure to adhere to requirements of NMP-TR-424, License Operator Continuing Training Exam Development, Version 3.1. NMP-TR-424 was the procedure that the licensee used to implement industry standard ACAD 07-001, Guidelines for the Continuing Training of Licensed Personnel. ACAD 07-001 is a methodology which can be used to fulfill 10 CFR 55.59(c), "Requalification program requirements" and 10 CFR 55.4, "Systems approach to training (SAT)."

Description: The inspector's review of the licensee's 2014 annual operating examination schedule identified the following examination overlap issues:

- One licensed SRO who failed the JPM portion of the exam was administered a retake exam; however, the retake exam included four of five JPMs that had previously been administered to different licensed operators earlier in the 2014 annual operating exam cycle. Procedure NMP-TR-424, Section 4.3.1.9, required that at least 50% of the JPM exam consist of JPMs that were not used in any other exam in the same exam cycle.
- One licensed RO did not complete the annual operating exam during the scheduled exam cycle due to absence. When the RO returned, the licensee's training staff administered two simulator scenarios that had previously been administered to different licensed operators earlier in the annual operating exam cycle. Procedure NMP-TR-424, Section 4.4.1.5, required that at least 50% of each annual Simulator

exam consist of exam scenarios that were not previously been used in any other exam set in the same exam cycle.

Analysis: The inspectors determined that the licensee's failure to adhere to overlap standards in NMP-TR-424 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective in that the failure to adhere to examination overlap standards adversely affected the quality of the administration of the operating exams. The inspectors assessed the significance in accordance with Manual Chapter 0609, Significance Determination Process, Appendix I, Licensed Operator Requalification Significance Determination Process (SDP). The finding was related to requalification exam security because it involved test item repetition between requalification examinations administered during different weeks of a training cycle. This finding was determined to be of very low safety significance (Green) because there was no evidence that a licensed operator had actually gained an unfair advantage on an examination required by 10 CFR 55.59. The finding was directly related to the cross-cutting aspect of procedure adherence of the cross-cutting area of Human Performance because the training staff did not follow the guidance for all licensed operators' 2014 annual operating exam. [H.8]

Enforcement: 10 CFR 55.49 stated "Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by this part." 10 CFR Part 55 includes 10 CFR 55.59, "Requalification", which requires administration of an annual operating exam to all licensed operators. Contrary to the above, the inspectors identified two examples which could have compromised the integrity of any required application, test, or examination during the 2014 licensed operator annual operating examination. NMP-TR-424 was the procedure that the licensee used to implement industry standard ACAD 07-001, "Guidelines for the Continuing Training of Licensed Personnel." ACAD 07-001 was a methodology which can be used to fulfill 10 CFR 55.59(c), "Requalification program requirements" and 10 CFR 55.4, "Systems approach to training (SAT)." Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CR 10115484, the violation is being treated as a Non-Cited Violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000424, 425/2015003-01, Failure to Maintain Requalification Examination Integrity.

.2 Written NRC Biennial Examinations Did Not Meet Qualitative Standards

Introduction: An NRC-identified finding was identified based on a determination that between 20 and 40 percent of the written examination questions administered to licensed operators during the biennial requalification examination did not meet the requirements of NMP-TR-424, "Licensed Operator Continuing Training Exam Development" and NUREG-1021, "Operator Licensing Examination Standards For Power Reactors", Revision 10.

Description: The inspectors evaluated the content of two NRC-required biennial written examinations (SRO Written Exam 1 and RO Written Exam 5) that the licensee developed and administered to licensed operators in 2014, to assess if the questions were flawed. The inspectors reviewed a total of 70 questions (35 questions per examination). Seventeen of the 70 questions (approximately 24 percent) were determined to be flawed.

- Six of the flawed questions were two-part questions, where the stem of the question identified a plant condition by name, which matched the name of a site specific procedure, or the name of a specific abnormal/emergency procedure, and the correct answer to one part of the question could be copied from the associated procedure with little mental activity. Consequently, the discrimination validity of the test items was unacceptably compromised since the odds of obtaining the correct answer for the remaining portion of the two-part question, by chance alone, was fifty percent. As a result, the overall level of difficulty for each of these six test items was “1” using the 1 – 5 (easy – difficult) rating scale (questions in the 2 – 4 range were acceptable).
- Three of the flawed test items were two-part questions, similar to the six flawed questions described above, but the answer to both parts of the question could be copied from the associated procedure with little mental activity (Direct Look-up).
- Eight of the flawed test items contained psychometric flaws such as two or more non-plausible distracters or partially correct answers.

NMP-TR-424, Section 4.2.4, Written Biennial Exams without a Static Exam, required that all test questions shall be free from psychometric errors, shall not be a direct lookup, and adhere to the psychometric attributes stated in NUREG-1021. The inspectors determined that, collectively, these flaws adversely affected the examinations' ability to discriminate a competent operator from an operator who was not competent.

Analysis: The inspectors determined that the failure to ensure that biennial written examinations met the qualitative industry and site standards established for written examinations, specifically defined in NMP-TR-424, was a performance deficiency. The inspectors determined that the PD was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective in that the quality of biennial written examinations potentially impacted the licensee’s ability to appropriately evaluate licensed operators. The significance of the finding was evaluated using IMC 0609, Appendix I, “Operator Requalification Human Performance Significance Determination Process (SDP).” Blocks 4 and 5 of IMC-609 Appendix I resulted in a finding of very low safety significance (Green) because between 20 and 40 percent of the questions reviewed did not meet the standard. No cross-cutting aspect was identified that would be considered a contributor to the cause of the finding.

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it was identified as FIN 05000424, 425/2015003-02, NRC Biennial Written Examinations Did Not Meet Qualitative Standards.

1R12 Maintenance Effectiveness (71111.12)a. Inspection Scope

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

- Unit 2, system 1202, maintenance rule evaluation for inadequate level in the ultimate heat sink due to failure of the train "B" nuclear service cooling water (NSCW) level indication
- Unit 2, system 1501, "Containment Air Cooling (ESF)," Containment Cooling Unit #3, functional failure

b. Findings

No findings were identified.

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

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

- Week of August 17: Unit 1 'YELLOW' equipment out-of-service (EOOS) risk profile due to planned maintenance on the "B" trains of RHR and CCW
- August 25, 2015: Units 1 and 2 'GREEN' EOOS risk profile following unplanned unavailability of the service auxiliary transformer due to a fault on the Wilson switchyard
- Week of August 31: Unit 2: 'YELLOW' EOOS risk profile due to planned maintenance on the "A" trains of RHR and CCW.
- Week of September 14: Unit 1 'YELLOW/ORANGE' EOOS for "A" train RHR pump OOS for motor replacement

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected the four operability determinations or functionality evaluations listed below for review based on the risk-significance of the associated components and systems. The inspectors reviewed the technical adequacy of the determinations to ensure that technical specification operability was properly justified and the components or systems remained capable of performing their design functions. To verify whether components or systems were operable, the inspectors compared the operability and design criteria in the appropriate sections of the technical specification and updated final safety analysis report to the licensee's evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

- Unit 1, Immediate determination of operability (IDO) for the train "B" EDG due to fuel oil lubricity being out of specification, corrective action report (CAR) 258440
- Unit 2, Unexpected control room alarm ALB16-E03,"AFW Turbine Trouble", CR 1015572
- Unit 1, IDO for reactor coolant system seal table leak, CAR 258407
- Units 1 and 2, IDO for Part 21 NAMCO Limit Switches, CAR259129

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors verified that the plant modification listed below did not affect the safety functions of important safety systems. The inspectors confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems, and components. The inspectors also verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition. Additionally, the inspectors evaluated whether system operability and availability, configuration control, post-installation test activities, and changes to documents, such as drawings, procedures, and operator training materials, complied with licensee standards and NRC requirements. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications. Documents reviewed are listed in the Attachment.

- SNC 690467, Temporary alignment configuration of Unit 2 “B” train CCW to support maintenance on the Unit 2 “B” train spent fuel pool heat exchanger

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the five maintenance activities listed below to verify the work performed was completed correctly and the test activities were adequate to verify system operability and functional capability.

- Maintenance Work Order (MWO) SNC701569 - Unit 1 turbine driven auxiliary feedwater (TDAFW) pump
- MWO SNC566385, Unit 1 “A” train RHR motor replacement
- MWO SNC460456, Unit 1 “B” train RHR heat exchanger mini flow control motor-operated valve (MOV) maintenance
- MWO SNC708597, Unit 2 “B” train NSCW replacement of failed ‘NAL2’ board
- MWO SNC467085, Unit 2 “A” train RHR refueling water storage tank suction MOV refurbishment

The inspectors evaluated these activities for the following:

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

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

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

For the Unit 1 refueling outage which began on September 20, 2015, through the remainder of the reporting period, the inspectors evaluated the following outage activities:

- outage planning
- shutdown, cooldown, and refueling
- reactor coolant system instrumentation and electrical power configuration
- reactivity and inventory control
- decay heat removal and spent fuel pool cooling system operation

The inspectors verified that the licensee:

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

Routine Surveillance Tests

- 14805B-2 Ver. 5, Train B RHR pump In-Service Test and Response Time Test
- 37082-2 Ver. 6.2, Sampling Unit 2 Emergency Diesel Fuel Storage Tanks
- 11415-C, Ver. 25.2, Fuel Handling Building Post Accident Ventilation Actuation Logic Surveillance Test

In-Service Tests (IST)

- 14802A-1 Ver. 6.1, Train A NSCW/Pump Check Valve IST and Response Time Test

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on July 28, 2015. The inspectors observed licensee activities in the technical support center to evaluate implementation of the emergency plan, including event classification, notification, and protective action recommendations. The inspectors evaluated the licensee's performance against criteria established in the licensee's procedures. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety, Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controlsa. Inspection Scope

Hazard Assessment and Instructions to workers: During facility tours, the inspectors directly observed labeling of radioactive material and postings for radiation areas, HRAs and airborne radioactivity areas established within the radiologically controlled area (RCA) of the U1 containment, U1 and Unit 2 (U2) auxiliary buildings, and selected storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas. The inspectors reviewed survey records for several plant areas including surveys for alpha emitters, hot particles, airborne radioactivity, gamma surveys with a range of dose rate gradients, and pre-job surveys for upcoming tasks. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. For selected outage jobs, the inspectors attended pre-job briefings and reviewed radiation work permit (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected U1 and U2 Locked High Radiation Area (LHRA) and Very High Radiation Area (VHRA) locations. Changes to procedural guidance for LHRA and VHRA controls were discussed with HP supervisors. Controls and their implementation for storage of irradiated material within the spent fuel pool were reviewed and discussed in detail. Established radiological controls (including airborne controls) were evaluated for selected U1 refueling outage tasks including reactor head disassembly, reactor head lift, upper internals lift, pressurizer nozzle inspections, and locked high radiation level decontamination and trash movement in U1 containment. In addition, licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations were reviewed and discussed.

Occupational workers' adherence to selected RWP and HP technician (HPT) proficiency in providing job coverage were evaluated through direct observations and interviews with licensee staff. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results reactor head disassembly, reactor head lift, upper internals lift, pressurizer nozzle inspections, and locked high radiation level decontamination and trash movement in U1 containment. ED alarm logs were reviewed and worker response to dose and dose rate alarms during selected work activities was evaluated. For HRA tasks involving significant dose rate gradients, the inspectors evaluated the use and placement of whole body and extremity dosimetry to monitor worker exposure.

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA using small article monitor (SAM), personnel contamination monitor (PCM), and portal monitor (PM) instruments. The inspectors reviewed selected calibration records for selected release point survey instruments and discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. The inspectors compared recent 10 Code of Federal Regulations (CFR) Part 61 results for the Dry Active Waste (DAW) radioactive waste stream with radionuclides used in calibration sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Problem Identification and Resolution: CRs associated with radiological hazard assessment and control were reviewed and assessed. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedures. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radiation protection activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12; TS Sections 5.4 and 5.7; 10 CFR Parts 19 and 20; and approved licensee procedures. Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in the Attachment.

b. Findings

Introduction: A Green, self-revealing, NCV of TS 5.7.1, "High Radiation Area," for an unauthorized entry into a HRA.

Description: On September 23, 2014, during U2 Refueling Outage 17 (2R17), a crew was tasked to remove hangers near Unit 2 Loop 2 Safety Injection Hot Leg Isolation Valve No. 2-1204-X4 on the 171' elevation of containment. This valve was located inside the bioshield in a HRA. The crew was instructed by their craft supervisor to stop by the HP desk after their pre-job brief. The workers interpreted this instruction to check in with the HP desk inside containment by the entrance into the bioshield, instead of the ALARA trailer where a required specific HRA radiological briefing was to be provided. The workers entered containment and accessed the work area through a HRA-posted swing-gate. Upon leaning against piping in the work area, one of the workers received a dose rate alarm on his ED. Upon receiving the alarm, the crew immediately stopped work and exited the area. The worker's ED dose rate alarm setpoint was 150 mrem/hr under RWP 14-2600, a moderate risk RWP for general entry into containment. The highest dose rate seen by the ED was 258.7 mrem/hr. Documented dose rates in the area were 240 mrem/hr on contact and 95 mrem/hr at 30 cm based on a follow-up survey after the ED alarm. A follow-up investigation determined that radiological aspects of the specific job were not discussed in the pre-job brief, the HP technician in containment did not challenge the crew as to whether or not they received their HRA briefing, and the crew did not follow adequate radiological safety practices, such as reading instructions on the HRA posting prior to entry and not leaning against piping.

Analysis: The inspectors determined that entry into a HRA without meeting the entry requirements specified in T.S. 5.7.1 was a performance deficiency. This finding is more than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of Human Performance and adversely affects the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Workers who enter HRAs with inadequate knowledge of current radiological conditions could receive unintended occupational exposures. The finding was evaluated using the Occupational Radiation Safety Significance Determination Process (SDP). The finding was not related to ALARA planning, nor did it involve an overexposure or substantial potential for overexposure, and the ability to assess dose was not compromised. Therefore, the inspectors determined the finding to be of very low safety significance (Green). In accordance with IMC 0612, definition 03.15, "Present Performance", this finding does not involve a cross-cutting aspect (CCA) because immediate corrective actions were taken, changes have been made, and the performance deficiency occurred over a year ago with no additional HRA boundary violations since then. Corrective actions included a human performance review board, a station clock reset and plant-wide communication for a second HRA violation occurrence within 6 months, crew supervisors to perform at least one observation of pre-job briefs for one of their crews each day, field HP technicians to validate each worker's HRA briefing status, crew supervisors to discuss specific radiological expectations during pre-shift meetings in addition to the required specific HRA briefings, and crew supervisors to have access to the radiological survey maps software (RADIS) on their computers to be used in radiological discussions during pre-shift meetings.

Enforcement: TS 5.7.1, "High Radiation Area," requires in part, individuals entering HRAs meet one or more of the following criteria: a) be provided with a radiation monitoring device that continuously indicates radiation dose rate in the area; b) be provided with a radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them or c) be accompanied by an individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and performs periodic radiation surveillance at the frequency specified by Health Physics supervision in the RWP. Contrary to the above, on September 23, 2014, a worker entered a HRA without being made aware of the dose rate levels in the area and not being accompanied by an individual qualified in radiation protection procedures. The licensee entered this issue into the CAP as CR 870060 and performed follow-up surveys and convening a human performance review board to examine causal factors for the purpose of determining corrective actions. Because this violation was of very low safety significance and it was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with the Enforcement Policy: NCV 05000425, 2015003-03, Unauthorized Entry into a High Radiation Area.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Radioactive Effluent Treatment Systems: The inspectors walked-down selected components of the gaseous and liquid radioactive waste (radwaste) processing and effluent discharge systems. To the extent practical, the inspectors observed and evaluated the material condition of in-place waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. Inspected components included liquid holding tanks, air cleaning systems, effluent monitoring equipment, and associated piping and valves. The inspectors interviewed licensee staff regarding radwaste equipment configuration and effluent monitor operation. The inspectors also reviewed surveillance testing records for auxiliary building exhaust filtration systems.

Effluent Sampling and Release: The inspectors observed the collection and processing of a liquid releases from one of the plant's waste monitor tanks. The inspectors reviewed recent liquid and gaseous release permits including pre-release sampling results, effluent monitor alarm setpoints, and public dose calculations. The inspectors reviewed the 2013 and 2014 Annual Radioactive Effluent Reports to evaluate reported doses to the public, to review any anomalous results, and to review Offsite Dose Calculation Manual (ODCM) changes. The inspectors also reviewed special reports submitted for radiation monitors that were out of service and associated compensatory sampling records. The inspectors reviewed results of the 2013 and 2014 radiochemistry cross-check program. The inspectors also reviewed effluent source term evaluation and changes to effluent release points. In addition, the inspectors evaluated recent land use census results and meteorological data used to calculate doses to the public.

Ground Water Protection: The licensee's implementation of the Industry Ground Water Protection Initiative was reviewed for changes since the last inspection. Groundwater sampling results obtained since the last inspection were reviewed. Licensee response, evaluation, and follow-up to spills and leaks since the last inspection were reviewed in detail. Records reviewed are listed in the report Attachment.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) documents in the areas of gaseous and liquid effluent processing and release activities. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NMP-GM-002, Corrective Action Program, Version (Ver.) 13.2. The inspectors also discussed the scope of the licensee's internal audit program and reviewed recent assessment results.

Effluent process and monitoring activities were evaluated against details and requirements documented in Final Safety Analysis Report (FSAR) Section 11; ODCM; TS 5.6.3 (Annual Radioactive Release Report), 10 CFR Part 20; Appendix I to 10 CFR Part 50; and approved licensee procedures. In addition, ODCM and FSAR changes since the last onsite inspection were reviewed against the guidance in NUREG-1301 and Regulatory Guides (RG)s 1.109, RG 1.21, and RG 4.1. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation: The inspectors observed routine sample collection and surveillance activities as required by the licensee's environmental monitoring program. The inspectors noted the material condition and operability of airborne particulate filter and iodine cartridge sample stations and observed collection of weekly air samples at selected monitoring locations. The inspectors checked environmental dosimeters for material condition at selected sites. The inspectors also observed the collection of milk and vegetation samples. In addition, the inspectors reviewed and evaluated land use census results, changes to the ODCM, monitoring for hard-to-detect radionuclides, and sample collection/processing activities.

The inspectors reviewed the last two calibration records for selected air samplers. The inspectors also reviewed the 2013 and 2014 Radiological Environmental Operating Reports, the 2014 Annual Radioactive Effluent Report, results of the 2013 and 2014 interlaboratory cross-check program for the Georgia Power Environmental Laboratory, and procedural guidance for environmental sample collection and processing. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements. The inspectors reviewed the licensee's groundwater monitoring program as part of Inspection Procedure 71124.06.

Meteorological Monitoring Program: The inspectors observed the physical condition of the primary meteorological tower and its instrumentation and discussed equipment operability and maintenance history with licensee staff. The inspectors evaluated transmission of locally generated meteorological data to other licensee groups such as main control room operators. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed the last two calibration records for applicable tower instrumentation. The inspectors also evaluated measurement data recovery for 2013 and 2014.

Problem Identification and Resolution: The inspectors reviewed CAP documents in the areas of radiological environmental monitoring and meteorological tower maintenance. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

REMP implementation and meteorological monitoring activities were reviewed against the guidance and requirements of 10 CFR Part 20; Appendices E and I to 10 CFR Part 50; TS Section 5; FSAR Chapter 2; ODCM; NUREG-1301, "Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors"; RG 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment"; Safety Guide 23, "Onsite Meteorological Programs"; Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program" – 1979; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

a. Inspection Scope

Waste Processing and Characterization: During inspector walk-downs, accessible sections of the liquid and solid radioactive waste (radwaste) processing systems were assessed for material condition and conformance with system design diagrams. Inspected equipment included radwaste operator panels, storage tanks, resin transfer piping, processing filters and skids in the Radwaste Processing Facility (RPF), and abandoned processing equipment. The inspectors discussed component function, processing system changes, and radwaste program implementation with licensee staff.

The Annual Radioactive Effluent Release Reports (ARERR) for 2012-2014 were reviewed. Current radionuclide waste characterizations for Dry Active Waste (DAW), Reactor Coolant System (RCS) filters, Spent Fuel Pool (SFP) filters, and RPF Resins were reviewed and discussed with radwaste staff. For DAW and RPF Resins, the inspectors evaluated analyses for hard-to-detect nuclides, reviewed the use of scaling factors, and examined comparison results between licensee waste stream characterizations and outside laboratory data. Waste stream mixing, concentration averaging methodology, and monitoring of changes in isotopic mixtures were evaluated and discussed with radwaste staff.

Radioactive Material Storage: During walk-downs of indoor and outdoor radioactive material storage areas, the inspectors observed the physical condition and labeling of storage containers and the posting of Radioactive Material Areas. The inspectors also reviewed licensee procedural guidance for storage and monitoring of radioactive material. For selected waste liners, the inspectors verified that the licensee maintained an accurate inventory of package contents, and had performed adequate tests to check for buildup of explosive gases and water intrusion.

Transportation: Selected shipping records were reviewed for consistency with licensee procedures and compliance with NRC and Department of Transportation (DOT) regulations. The inspectors reviewed emergency response information, DOT shipping package classification, waste classification, and radiation survey results. In addition, training records for selected individuals who performed radiation surveys, package loading and closure, and characterization of the shipments were reviewed to ensure that they had been trained in accordance with DOT requirements. While onsite, the inspector observed shipment preparation, loading, and final survey of an Excepted Package of Limited Quantity containing Pressurizer Code Safety Valves. There was a lack of other outgoing shipments during the week of inspection.

Problem Identification and Resolution: The inspectors reviewed CRs in the area of radwaste/shipping. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedures. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radwaste processing, radioactive material handling, and transportation activities were reviewed against the requirements contained in the licensee's Process Control Program, UFSAR Chapter 11, 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71, and 49 CFR Parts 172-178. Licensee activities were also evaluated against guidance provided in the Branch Technical Position on Waste Classification (1983 and 2015) and NUREG-1608. Documents reviewed are listed in the report Attachment.

b. Findings

No findings were identified.

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

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

Cornerstone: Mitigating Systems

- high pressure safety injection (SI) systems performance indicator (Units 1 and 2)
- residual heat removal (RHR) systems performance indicator (Units 1 and 2)
- heat removal systems (AFW) performance indicator (Units 1 and 2)

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the PIs. The inspectors reviewed plant records compiled between July 1, 2014, and June 30, 2015, to verify the accuracy and completeness of the data reported for the station.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed the PI results from January 2014 through July 2015. For the assessment period, the inspectors reviewed electronic dosimetry alarm logs and CRs related to controls for exposure significant areas.

Public Radiation Safety Cornerstone

- Radiological Control Effluent Release Occurrences

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

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (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 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of the following condition reports:

- CR 10060388, Unit 1 SI motor inboard and outboard low bearing oil viscosity
- CR 10066747, Nuclear Oversight Action for Improvement (AFI) associated with the station's failure to maintain emergency operating procedures current with the

Pressurized Water Reactors Owners Group (PWROG)/Westinghouse Owners Group (WOG) emergency response guidelines (ERGs).

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

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

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Event Follow-up

Using Inspection Procedure (IP) 71153, inspectors followed up on the following licensee event report (LER) to evaluate licensee performance related to the events, the accuracy of the LER, and the appropriateness of corrective actions. Inspectors conducted walk-downs of affected equipment, in-office reviews of corrective action, modification, and design documents, and interviewed personnel from the licensee's operations, design, and licensing departments. The inspectors evaluated the licensee's compliance with its operating license and applicable regulations.

.1 (Closed) Licensee Event Report 05000424/425/2014-001-00, Operation Outside of Pressure and Temperature Limit Report Curve Required by Technical Specification 3.4.3

a. Inspection Scope

On February 20, 2014, the licensee identified that both units had operated outside the Pressure/Temperature Limit Report (PTLR) curve required by Technical Specification (TS) LCO 3.4.3, "Reactor Coolant System (RCS) Pressure and Temperature (P/T) Limits." during previous refueling outages. The PTLR identifies a lower pressure limit of zero (0) pounds per square inch gauge (psig) that is applicable at all times. From October 2003 through May 2013, refueling outages were conducted on each unit where the RCS was placed under a vacuum (negative pressure) to perform fill and vent operations. The licensee determined that the cause for not entering the required action statements for TS 3.4.3 was failure to recognize that a vacuum was not allowed by the TS. Corrective actions to revise the PTLR for Units 1 and 2 to address establishing a negative pressure (vacuum) in the reactor vessel have been completed. The inspectors reviewed this LER and the associated corrective actions and determined this was a minor violation and not subject to formal enforcement action in accordance with the NRC's Enforcement Policy because the negative internal pressures, due to the vacuum

refill operations, did not challenge stress margins of the reactor pressure vessel and related components.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting

On October 27, 2015, the resident inspectors presented the inspection results to Mr. Scott Briggs, Site Operation Director, and other members of the licensee's staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

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

- Technical Specifications 5.4.1.b, "Procedures," required, in part, that written procedures shall be established, implemented, and maintained for the emergency operating procedures (EOPs) required to implement NUREG-0737, "Clarification of TMI Action Plan Requirements," and Supplement 1 to NUREG-0737. Contrary to this requirement, as of August 15, 2007, the licensee failed to maintain EOPs required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1. The licensee failed to maintain EOP 19100-C, "ECA-0.0 Loss of All AC Power," version 39, consistent with revised Pressurized Water Reactor Owners Group/Westinghouse Owners Group emergency response guidelines that restricted the RCS cooldown rate to less than 100 degrees Fahrenheit per hour to prevent thermal shock to the reactor coolant pump (RCP) seals following a loss of all alternating current power (SB) event. The licensee entered this violation into the CAP as CR 10066747 and revised EOP 19100-C consistent with the updated guidance. A bounding detailed risk evaluation was performed by an NRC regional senior risk analyst (SRA) who determined the finding to be of very low risk significance (Green). The dominant result was a grid-related Loss of Offsite Power that then proceeds to an SBO event and RCP seal failure due to thermal shock.

- 10 CFR 55.21, "Medical examination," states, in part, that a licensee shall have a medical examination by a physician every two years. Contrary to the above, on March 24, 2015, the licensee identified that a licensed operator did not complete the required biennial NRC medical examination by February 2015, which was the two year due date. The licensed operator's requirement to have a medical examination was incorrectly removed from the licensee's learning management system (LMS) database when the operator entered the initial license training program to upgrade to a senior operator. The inspectors determined that the violation was not greater than very low safety significance (Green) because the licensed operator was not actively performing licensed duties in the control room. This issue was entered in the licensee's corrective action program as CR 10045159.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

N. Carter, Heat Exchanger System Engineer
B. Cocker, Engineering Programs Manager
J. Dixon, Health Physics Manager
G. Dye, Environmental Lab Technician
T. Fowler, Chemistry Manager
G. Gunn, Regulatory Affairs Manager
M. Hayden, EP Manager
M. Henson, Operations Training Manager
K. Jenkins, Exam Supervisor
J. Klecha, Operations Director
S. Kowalski, Engineering Systems Manager
D. Lewis, Operations Continuing Training Lead
A. Lowe, Operations Initial Training Lead
C. Montgomery, Medical Services Supervisor
K. Morrow, Licensing Engineer
D. Myers, Plant Manager
G. Ohmstede, Fleet Exam Manager
C. Olive, Senior Nuclear Chemist
T. Parton, Nuclear Oversight Manager
R. Rodino, RP Superintendent
T. Schenk, Maintenance and Technical Training Manager
D. Stiles, Training Director
J. Summy, Engineering Director
K. Taber, Site Vice-President
C. Talley, Nuclear Oversight Assessor
J. Thomas, Work Management Director
J. Wade, Site Design Manager
K. Walden, Licensing Engineer
A. Whaley, Co-owner-OPC

LIST OF REPORT ITEMS

Open and Closed

NCV 05000424, 425/2015003-01	Failure to Maintain Requalification Examination Integrity (Section 1R11)
FIN 05000424, 425/2015003-02	NRC Biennial Written Examinations did not Meet Qualitative Standards (Section 1R11)
NCV 05000425/2015003-03	Unauthorized Entry into a High Radiation Area (Section 2RS1)

Closed

LER 05000424/425/2014-001-00 Operation Outside of Pressure and Temperature Limit
Report Curve Required by Technical Specification 3.4.3
(Section 4OA3.1)

LIST OF DOCUMENTS REVIEWED**Section 1R04: Equipment Alignment**Procedures

11115-2 Rev. 10.2, Containment Spray System Alignment
13105-1 Ver. 55.0, Safety Injection System – Checklist 1, Hand switch Normal
14495-1 Rev. 7.1, Auxiliary Feedwater System Flow path Verification
13610-1 Ver. 51.1, Auxiliary Feedwater System – Checklist 2, Auxiliary Feedwater System
Alignment for Standby Readiness
11715-1, Rev. 15, Component Cooling Water System Alignment

Drawings

1X4DB121 Rev. 42.0, P&I Diagram, Safety Injection System, System No. 1204
1X4DB131 Rev. 35.0, P&I Diagram Containment Spray System – System No. 1206
1X4DB161-1 Rev. 45.0, P&I Diagram, Auxiliary Feedwater System, System No. 1302
1X4DB161-2 Rev. 28.0, P&I Diagram, Auxiliary Feedwater System, System No. 1302
1X4DB136 Rev. 33.0, P&I Diagram, Component Cooling Water System, System No. 1203
1X4DB137 Rev. 19.0, P&I Diagram, Component Cooling Water System, System No. 1203

Other Documents

1-DT-15-1204-00357, SIP 1A Fragnet Alignment

Section 1R05: Fire ProtectionProcedures

29124-C, Fire Doors Inspection, Ver. 25.4
92704-1, Rev. 2.2, Zone 4 – Auxiliary Building Wing Area Fire Fighting Preplan
92705-1, Rev. 4.2, Zone 5 – Auxiliary Building – Level D Fire Fighting Preplan
92709-1, Rev. 3.2, Zone 9 – Auxiliary Building – Level D Fire Fighting Preplan
92710-1, Rev. 4.2, Zone 10 – Auxiliary Building – Level D Fire Fighting Preplan
92726B-2 Rev. 3.0, Zone 26B – Auxiliary Building – Levels A&B, Fire Fighting Preplan
92730-2 Rev.1.0, Zone 30 – Auxiliary Building – Level B, ACCW Pump, Train A Fire Fighting
Preplan
92731-2 Rev.1.0, Zone 31 – Auxiliary Building – Level B, Fire Fighting Preplan
92732-2 Rev.1.0, Zone 32 – Auxiliary Building – Level B, SI Pump, Train A Fire Fighting Preplan
92733-2 Rev.1.0, Zone 33 – Auxiliary Building – Level B, Fire Fighting Preplan
92759-1, Zone 59 Control Building Level B Fire Fighting Preplan, Rev. 1.2
92759-2, Zone 59 Control Building Level B Fire Fighting Preplan, Rev. 0.2
92768-1, Zone 68 Control Building Level B Fire Fighting Preplan, Rev. 1.2
92768-2, Zone 68 Control Building Level B Fire Fighting Preplan, Rev. 0.2
92769-1, Zone 69 Control Building Level B Fire Fighting Preplan, Rev. 1.2
92769-2, Zone 69 Control Building Level B Fire Fighting Preplan, Rev. 0.2
92775-1, Zone 75 Control Building Level B Fire Fighting Preplan, Rev. 4.1
92775-2, Zone 75 Control Building Level B Fire Fighting Preplan, Rev. 0.2
92861-2 Rev. 1.1, Zone 161 – Diesel Generator Building Fire Fighting Preplan

92863-2 Rev. 0.2, Zone 163 – Diesel Generator Building – Train A DFO Tank Fire Fighting Preplan

92865-2 Rev. 0.2, Zone 165 – Diesel Generator Tanks and Pump house Fire Fighting Preplan

92866-2 Rev. 0.2, Zone 166 – Diesel Generator Tanks and Pump house Fire Fighting Preplan

AX4DR801, Fire Protection Boundary List, Rev. 11.0

Section 1R06: Flood Protection Measures

Procedures

NMP-ES-051-004 Rev. 3.4, Pull Box Inspection Procedure

Work Orders

SNC615504, Pull-box and manhole water intrusion inspection

SNC615270, Pull-box and manhole water intrusion inspection

Drawings

2X4DB147-1 Rev. 18.0, P&I Diagram, Aux Bldg. Flood Retaining Rooms - Alarms and Drains System No. 1218

2X4DB144-1 Rev. 10.0, P&I Diagram, Containment & Aux Bldg. – Radioactive System No. 1218

2X4DB143 Rev. 23.0, P&I Diagram, Containment & Aux Bldg. – Radioactive System No. 1214

AX1D94A09 Rev. 5, Auxiliary Building Barrier Criteria for Penetration Seals Lvl B

2X1D08H005 Ver. 7.0, Aux Bldg. Architectural Penetration Seal Floor Plan (Lvl B) Unit 2

2X1D08J012 Ver. 3.0, Aux. Bldg. Architectural Penetration Seal Interior Elevations (Lvl B) Unit 2

Calculations

X6CXC-30, Rev. 9, Unit 1 Flooding Analysis – Auxiliary Building Level “B”

X6CYC-30, Rev. 10, Unit 2 Flooding Analysis – Auxiliary Building Level “B”

Corrective Action Documents Reviewed

10083329, Pull-box not found in NMP-ES-051-004

10117952, Pull-boxes not meeting acceptance criteria

Other Documents

DC-1003 Rev. 9, Flooding Inter-discipline

Section 1R07: Heat Sink Performance

Procedures

83309-C Rev. 9, Safety-Related Heat Exchanger Inspection

NMP-ES-012 Rev. 9, Heat Exchanger Program

Drawings

2X4DB133-2, Nuclear Service Cooling Water System No. 1202, Rev. 53

2X4DB134, Nuclear Service Cooling Water System No. 1202, Rev. 31

2X4DB135-1, Nuclear Service Cooling Water System No. 1202, Rev. 28

2X4DB135-2, Nuclear Service Cooling Water System No. 1202, Rev. 29

Section 1R11: Licensed Operator Requalification Program

Procedures

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NMP-TR-406, License Administration, Version 6.2

NMP-TR-416, LOCT Program Administration, Version 5.6

NMP-TR-416-003, Vogtle 1&2 LOCT Program Instruction, Version 4.2

NMP-TR-422, Simulator Configuration Control, Version 6.0
 NMP-TR-422-001, Simulator Configuration & Performance Criteria, Version 3.0
 NMP-TR-422-002, Scenario Based Testing Instruction, Version 1.0
 NMP-TR-422-005, Vogtle 1&2 Simulator Testing Instruction, Version 2.0
 NMP-TR-424, LOCT Exam Development, Version 3.1
 NMP-TR-424-001, Operator License Regulatory Exam Security, Version 1.2

Other

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 V-RQ-SE-15501 Rev. 1.0, Simulator Exercise Guide: Operator Fundamental Scenario License Reactivation Packages (15 Records Reviewed)
 LORP Training Attendance records (12 Records Reviewed for Shift Crew 3)
 Medical Files (8 Records Reviewed)
 Remedial Training Records (4 remediation packages)
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 2014 Dynamic Scenario #13, Revision 19.2
 2014 Dynamic Scenario #14, Revision 15.1
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 V-RQ-JP-13006-002, Return Letdown to Service Following SI Termination, Revision 19

V-RQ-JP-13145-0030-2A, Locally Start the Diesel Generator 2A (Alt Path), Revision 5
 V-RQ-JP-13405-001, Place 1E 125VDC Battery Charger in Service, Revision 14.1
 V-RQ-JP-19011-001, Re-establish CCP Cold Leg Injection, Revision 7
 V-RQ-JP-19014-002, Transfer ECCS to Hot Leg Recirc (Alt Path), Revision 9
 V-RQ-JP-18019-002-U2, Establish RWST Gravity Drain to Cold Legs, Revision 3
 V-RQ-JP-18021-003B, Align NSCW Train B for Single Pump Operation, Revision 1.2
 V-RQ-JP-19030-007, Isolate an ARV on Ruptured S/G, Revision 2.0.
 V-RQ-JP-13130-003, Place Hydrogen Monitor in Service (Alt Path), Revision 3.0
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 V-RQ-JP-16900-001, Place RWST Sludge Mixing Isolation Valve on Jack, Revision 2.0

Section 1R12: Maintenance Rule Effectiveness

CAR 258133, 2LT-1607 read high giving false indication of water inventory, 7/16/15
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Procedures

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 17002-2 Ver. 17.1, Annunciator Response Procedure for ALB-02 on Panel 2A1 on MCB
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Drawings

2X4DB133-2 Ver. 53.0, P&I Diagram – Nuclear Service Water System – System No. 1202

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

10032-C, Ver. 11, Outage Risk Assessment Monitoring
 NMP-GM-031 Ver. 2.0, Online Configuration Risk Management Program
 NMP-GM-031-001 Ver. 2.1, Online Maintenance Rule (a)(4) Risk Calculations
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Other

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 EOOS risk profile for the week of 8/17-19/2015
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Section 1R15: Operability Evaluations

Procedures

NMP-AD-012 Ver. 12.6, Operability Determinations and Functionality Assessments
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Section 1R18: Plant Modifications

Procedures

NMP-ES-054-001 Rev. 3.2, Temporary Modification Processing

Work Orders

SNC 690467, Temporary alignment configuration of Unit 2 "B" train CCW to support maintenance on the Unit 2 "B" train spent fuel pool heat exchanger

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2X4DB136-1 Ver. 24.0, P&I Diagram – Component Cooling Water System – System No. 1203
 2X4DB136-2 Ver. 21.0, P&I Diagram – Component Cooling Water System – System No. 1203

Other

RER No. SNC677357, Unit 2 CCW B Train Operability with SFP HX Isolated and CW Pump Discharge Valves Throttled

Section 1R19: Post Maintenance Testing

14805A-1 Ver. 4, Train A RHR pump IST and response time test
 24060-1 Ver. 33, Auxiliary feedwater pump turbine speed indication and control 1S-15109 channel calibration
 24229B-2 Rev 5, NSCW Cooling Tower Train B Spray Header Bypass Valve Control 2T-1669 Channel Calibration
 Work Orders_SNC467085, SNC460456, SNC566385, SNC701569, SNC708597, SNC468538
 Drawing 1X4DB161-1 Ver. 45, P&I Diagram Auxiliary Feedwater System
 Unit 2 operator logs for 9/20-21/15

Section 1R22: Surveillance Testing

Procedures

11415-C, Ver. 25.2, Fuel Handling Building Post Accident Ventilation Actuation Logic Surveillance Test
 14802A-1 Ver. 6.1, Train A NSCW/Pump Check Valve IST and Response Time Test
 14805B-2 Ver. 5, Train B RHR pump IST and response time test
 17054-1 Ver. 14.2, Annunciator Response Procedure for ALB 54 on QHVC Panel
 30025-C Ver. 75, Periodic Analysis Scheduling Program
 30080-C Ver. 48, Diesel Fuel Chemistry Control
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 37082-2 Ver. 6.2, Sampling Unit Two Emergency Diesel Fuel Storage Tanks
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CRs10080256, 10083280, 10083280, 10123487

Section 1EP6 : Drill Evaluation

Vogtle Electric Generating Plant Facility Activation Drill Package, July 28, 2015

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures, Guidance Documents, and Manuals

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NMP-HP-206, Issuance, Use and Control of Radiation Work Permits, Ver. 3.0
NMP-HP-300, Radiation and Contamination Surveys, Ver. 3.1
NMP-HP-301, Airborne Radioactivity Sampling and Evaluation, Ver. 3.1
NMP-HP-302, Restricted Area Classification, Postings, and Access Control, Ver. 7.1
NMP-HP-302-001, Radiological Key Control, Ver. 2.1
NMP-HP-302-002, Radioactive Material Labeling Instruction, Ver. 1.0
NMP-HP-303, Personnel Decontamination, Ver. 2.4
NMP-HP-304, Decontamination of Areas, Tools and Equipment, Ver. 1.0
NMP-HP-305, Alpha Radiation Monitoring, Ver. 5.0
NMP-HP-400, Control and Accountability of Radioactive Sources, Ver. 3.0
NMP-HP-404, Release of Materials from the RCA and Protected Areas, Ver. 2.0

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RWP 15-1201, Replace RCP 1, 2, 3, 4 Seals & All Assoc. Work, Rev. 0
RWP 15-1400, Reactor Head Disassembly and Assembly and All Associated Work, Rev. 0
RWP 15-1406, Reactor Head and Upper Internals Lift and Set, Rev. 0
RWP 15-1502, ISI / NDT in Unit 1 CTMT, Rev. 0
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Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment

Procedures and Manuals

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NMP-GM-002, Corrective Action Program, Version 13.2

NMP-CH-021-003, Calibration of the Gamma Spectroscopy System Using APEX, Ver 1.0

33035-APEX, Gamma Spectroscopy for Radiochemistry Using APEX, Ver 10.1

33015-1, Obtaining Gaseous Samples for Radioactivity Analysis Unit 1, Version 18.1

36015-C, Radioactive Liquid Effluent Release Permit Guidelines, Version 30.3

37420-C, Sampling of the Common Radioactive Liquid Waste Management System, Version 5.1

36022-C, Containment Purge and Vent Permitting and Chemistry Monitoring, Version 23.2

NMP-EN-002-GL03, Vogtle Electric Generating Plant Groundwater Monitoring Plan for Radionuclides, Version 1.0

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Batch Liquid Release Permit #L-20150726-113-B, 1-WMT #9 07/26/2015

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Section 2RS7: Radiological Environmental Monitoring Program (REMP)

Procedures and Guidance Documents

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24684-C, Meteorological Station Primary 60M Wind Speed and Wind Direction Channel Calibration, Ver. 15

24688-C, Meteorological Station Primary 10M Ambient Temperature 60 M Ambient Temperature and 60-10M Delta Temperature Channel Calibration Check, Ver. 24

27917-C, Met Tower Battery Performance Test, Ver. 3.3

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 ENV2850, Vogtle Electric Generating Plant - Radiological Monitoring - Airborne Dust and Gaseous Iodine, Rev. 2
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Section 2RS8: Radioactive Material Processing and Transportation

Procedures, Guidance Documents, and Manuals

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 NP-HP-406, "Performing Surveys for Shipments of Radioactive Containers", Ver. 1.0
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 NMP-GM-002, "Corrective Action Program", Ver. 13.2
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Section 40A1: Performance Indicator VerificationProcedures

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Section 40A2: Identification and Resolution of Problems

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