

## Vogtle 2

# 1Q/2015 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Inadequate Maintenance Procedures and Usage Results in a Failed MFRV and an Automatic Reactor Trip**

Green. A self-revealing NCV of 10 CFR 50 Appendix B Criterion V, "Instructions, Procedures, and Drawings," was identified for failure to provide adequate work instructions as well as failure to follow the maintenance procedure used to install flexible and rigid conduit. Specifically, the work instructions did not provide adequate directions and/or precautions to properly slope conduit during installation to prevent water intrusion into a valve positioner. The work instructions referenced maintenance procedure 25008-C, "Flexible and Rigid Conduit Installation." The maintenance procedure referenced Vogtle design specification X3AR01 Section E-8, "Raceway Systems," which provided sloping and tightness criteria for conduit installations. The licensee conducted a root cause investigation and entered the event into their corrective action program (CR 797929). The licensee repaired the improperly sloped conduit, replaced the positioner, and revised procedure 25008-C to specify standards for proper sloping of conduits.

The finding was more than minor because it was associated with the procedure quality and human performance attributes of the reactor safety - initiating events cornerstone and it adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to provide adequate work instructions as well as failure to follow procedure 25008-C, "Flexible and Rigid Conduit Installation," resulted in the Unit 2 loop 3 main feedwater regulating valve (MFRV) positioner failing closed, causing a subsequent automatic reactor trip due to low-low steam generator (SG) water level. Because the inspectors answered "No" to all of the IMC 0609 Appendix A (dated June 19, 2012) Exhibit 1, Section B, "Initiating Events Screening Questions," the inspectors concluded that the finding was of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect of "procedure adherence" in the human performance area because the maintenance electricians did not follow Vogtle design specification procedures or drawings resulting in the improper sloping of the MFRV flexible conduit [H.8] (Section 40A3)

Inspection Report# : [2014003](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Mar 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Failure to Implement Maintenance Procedure for Containment Spray Pump**

A self-revealing NCV of TS 5.4.1.a, "Procedures," was identified for the licensee's failure to verify that the total indicated run-out (TIR) for the Unit 2 'B' train containment spray pump was within the limits of procedure 27052-C, Gould 3415 Pump Maintenance Procedure, Ver. 6.0. This violation was entered into the licensee's corrective action

program as CR 855892.

The failure to implement maintenance procedure 27052-C was a performance deficiency. The performance deficiency was more than minor because it was associated with the SSC and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective in that the failure to verify the 2B CS pump shaft TIR was within the procedural and vendor recommendation limits affected the CS system availability and reliability. The finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, or heat removal components, and it did not involve a reduction in function of hydrogen igniters in the reactor containment. 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.

Inspection Report# : [2015001](#) (*pdf*)

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Correctly Implement Control Rod Drive System Procedure During Reactor Startup Activities**

A self-revealing non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, "Procedures," was identified for the licensee's failure to implement system operating procedure SOP 13502-2, "Control Rod Drive and Position Indication System," version 42, when resetting the control rod drive system bank overlap unit (BOU). This caused an out-of-sequence control rod insertion that resulted in operators manually tripping the reactor. The licensee correctly reset the BOU prior to restarting the unit and enhanced the procedural guidance for resetting the BOU. The violation was entered into the licensee's corrective action program as condition report (CR) 879125.

The performance deficiency (PD) was more than minor because it was associated with the Configuration Control and Equipment Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective in that improper rod control system equipment lineup affected the licensee's ability to control reactivity. The finding screened as Green because the finding did not affect reactor protection system trip capability or result in an unintentional positive reactivity addition. The inspectors determined the finding had a cross-cutting aspect of "training" in the human performance area because the organization had not provided sufficient practical or hands-on training on resetting the BOU. [H.9]

Inspection Report# : [2014005](#) (*pdf*)

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Restore Nuclear Service Cooling Water Manual Valves to their Required 'Locked-Open' Position**

The NRC identified an NCV of TS 5.4.1.a, "Procedures" for the licensee's failure to properly implement administrative control procedure 10019-C, "Control of Safety Related Locked Valves," version 15.3. As a result, two nuclear service cooling water (NSCW) manual valves were not in their required 'locked-open' position. The licensee restored the valves to their 'locked-open' position. The violation was entered into the licensee's corrective action program as condition report 880824.

The performance deficiency was more than minor because it was associated with the Equipment Performance and Configuration Control attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective in that the throttled position of the valves reduced the cooling capability of the associated mitigating systems heat exchangers and the unsecured condition reduced the safety-related locked valve program's objective to control

and maintain the configuration of valves required to be in a specified position. The finding screened as Green because the flow rates associated with the valves' throttled position were determined to be sufficient to maintain the supported systems operability. The inspectors determined the finding had a cross-cutting aspect of "documentation" in the human performance area because the organization provided inaccurate documentation of the valves' manipulation log sheet. [H.7]

Inspection Report# : [2014005](#) (*pdf*)

**Significance:** **G** Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Follow Procedures Renders Safety Related Battery Charger Inoperable**

A self-revealing NCV of TS 5.4.1.a, "Procedures" was identified for the licensee's failure to properly implement approved maintenance procedures and work order instructions and inadvertently removed the 2AD1CB safety-related battery charger from service while attempting to perform routine battery surveillance on the 2CD1B battery. Upon discovery, the licensee immediately stopped the work and returned the battery charger to service. The licensee entered the condition into their corrective action program as CR 10002493.

The performance deficiency was 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 opening of the power supply breaker to the incorrect battery charger (2AD1CB) resulted in the charger being inoperable for a total of 30 minutes. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012. Since the inspectors answered "No" to all of the Exhibit 2, Mitigating Systems Screening Questions, the inspectors concluded that the finding was (Green). The inspectors determined the finding had a cross-cutting aspect of "Challenge the Unknown" in the Human Performance area because the station operator proceeded in the face of uncertainty. [H.11]

Inspection Report# : [2014005](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

**Significance:** **W** Jun 30, 2014

Identified By: Licensee

Item Type: VIO Violation

#### **Calculation Error Results in Significantly Non-Conservative EAL Threshold Values**

White: A finding and associated violation of 10 CFR 50.54(q)(2) was identified by the licensee for the failure to follow and maintain the effectiveness of emergency plans which use a standard emergency classification and action level scheme. Specifically, the licensee's emergency plan emergency action level (EAL) Category R – Abnormal Radiological RG1 (General Emergency) and RS1 (Site Area Emergency) specified threshold values which were sixty times too high due to a calculation error. As immediate corrective action, the licensee provided the corrected threshold values to appropriate management and decision-makers (shift managers/emergency directors). The licensee entered this issue into the corrective action program as CR 648248.

The performance deficiency was determined to be more than minor because it was associated with the emergency

preparedness cornerstone attribute of procedure quality. It impacted the cornerstone objective because it was associated with inappropriate EAL and emergency plan changes and their adequacy to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee's ability to declare a Site Area Emergency and General Emergency based on effluent radiation monitor values was degraded in that event classification using these radiation monitors would be delayed. The finding was assessed for significance in accordance with NRC Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," which states, "Failure to comply means that a program is noncompliant with a Regulatory requirement." The inspector determined that the issue of concern constituted a degraded rather than lost risk-significant planning standard (RSPS). The issue of concern was similar to the example in Table 5.4.1 (Degraded RSPS) and was determined to be of low to moderate safety significance (White). The violation was determined to meet the IMC 0305 criteria for enforcement discretion as an old design issue. A cross-cutting aspect was not assigned based on the elapsed time since the performance deficiency occurred and because the inspectors determined it was not reflective of current licensee performance. (Section 40A2)

Inspection Report# : [2014003](#) (*pdf*)

Inspection Report# : [2014008](#) (*pdf*)

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## Occupational Radiation Safety

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## Public Radiation Safety

**Significance:** **W** Dec 31, 2014

Identified By: NRC

Item Type: VIO Violation

### **Shipment of a Type B quantity of RAM in a Type A Container**

A self-revealing, preliminary White, AV of Technical Specification (TS) 5.4.1., Procedures, occurred on June 24, 2014, when a Type A shipping cask containing Type B radioactive waste (spent resin) was shipped by Southern Nuclear Operating Company (SNC) from the Vogtle Electric Generating Plant (VEGP), Units 1 and 2, to the Energy Solutions radioactive waste processing facility located in Barnwell, South Carolina. The serial number of the High Integrity Container (HIC) containing the spent resin was not verified when it was removed from its storage process shield and placed in the shipping cask, with the result that a HIC with a Type B quantity of resin was transported in a Type A shipping cask. This error resulted in multiple violations of NRC and Department of Transportation (DOT) regulations, which are included in Enclosure 2. The licensee entered the event in the corrective action program (CAP) as condition report (CR) 831652. Immediate corrective actions included suspension of radioactive waste shipments at Southern Nuclear Operating Company (SNC) facilities, and requalification of plant Vogtle radioactive shippers and oversight personnel.

The licensee's failure to document the location of radioactive waste stored in the process shields, as required by licensee procedure 46111-C, "Storage of Radwaste in Outdoor Process Shields," was a performance deficiency (PD). The PD was more than minor because it was associated with the public radiation safety cornerstone attribute of Program & Process (transportation program), and adversely impacted the cornerstone objective of ensuring adequate protection of public health and safety from exposure to RAM released into the public

domain. A Type B quantity of material left the licensee's facility and entered the public domain in an inadequate (Type A) container. The inspectors determined this finding has a cross-cutting aspect of in the Documentation component of the Human Performance area, because the licensee did not create and maintain complete, accurate, and up-to-date documentation used in preparing shipments of radioactive waste.

Inspection Report# : [2014009](#) (*pdf*)

**Significance:**  Sep 30, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Loss of Plant Effluent Monitoring Capability**

Green: A self-revealing NCV of TS 5.5.4, "Radioactive Effluent Controls Program," occurred when the licensee failed to maintain continuous, representative monitoring of the Unit 2 plant vent gaseous effluents as required by the offsite dose calculation manual (ODCM) for approximately ten days, between March 16 and March 26, 2014. The licensee entered the event in the corrective action program as CR 8284999, and took immediate corrective actions to establish continuous monitoring of the Unit 2 plant vent gaseous effluents. Corrective actions planned, completed, or under evaluation include, changes to the vent sampling procedure, impact assessment on ODCM requirements, departmental stand downs to share lessons learned, work control process changes for equipment tagouts, and training.

The performance deficiency was more than minor because it was associated with the public radiation safety cornerstone attribute of plant facilities, equipment and instrumentation availability and adversely impacted the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain. This finding was assessed for significance using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," issued February 12, 2008, and determined it to be of very low safety significance because the licensee was able to assess the dose to the public by correlating other plant radiation monitoring equipment and programs to demonstrate this dose was less than the values in Appendix I to 10 CFR Part 50 and/or 10 CFR 201301(e). This finding had a cross-cutting aspect of "identification" in the problem identification and resolution area because the licensee failed to recognize the impact a loss of vacuum indication had on the operability of 2RE12444 (the continuous monitoring equipment) completely, accurately, and in a timely manner [P1].

Inspection Report# : [2014004](#) (*pdf*)

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## **Security**

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## **Miscellaneous**

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