

# Oconee 1

## 2Q/2014 Plant Inspection Findings

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### Initiating Events

**Significance:** **W** Jun 27, 2014

Identified By: NRC

Item Type: VIO Violation

#### **Failure to Identify and Correct Weld Cracking in HPI Nozzle**

A White violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified when the licensee failed to identify a crack in a weld located in the Unit 1 High Pressure Injection (HPI) system. In 2004, a procedure was developed for augmented in-service inspection program ultrasonic examinations which effectively removed reasonable assurance that HPI nozzle component cracking would be identified and corrected. NDE-995, "Ultrasonic Examination of Small Diameter Piping Butt Welds and Base Material for Thermal Fatigue Damage," did not contain the necessary steps to achieve acceptable coverage for UT examinations when limitations were encountered.

The inspectors determined that the failure to ensure that station procedure NDE-995 was adequate to identify and correct cracking in weld 1-RC-201-105 was a performance deficiency. The inspectors determined that the performance deficiency was more than minor because it affected the Design Control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective in that an unidentified crack resulted in reactor coolant system pressure boundary leakage and a forced shutdown of Unit 1. The finding was determined to be White based on a detailed risk analysis. There was no immediate safety concern because the crack was repaired. The inspectors determined this finding has a cross-cutting aspect of H.7 in the Documentation component of the Human Performance area because the licensee did not create and maintain complete, accurate, and up-to-date documentation in procedure NDE-995 to ensure acceptable coverage for UT examinations.

Inspection Report# : [2014011](#) (*pdf*)

Inspection Report# : [2014012](#) (*pdf*)

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### Mitigating Systems

**Significance:** **G** Mar 21, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Evaluate the Under Voltage Relays at the Worst Case Minimum Drop Out Bus Voltage**

The team identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure that at the worst-case voltage, protective devices and thermal overload relays for safety-related loads would not trip prior to and after the transfer to the emergency power source. This transfer occurs for a sustained degraded voltage below the under voltage relay voltage settings for the duration of the time delay setting or the manual actions credited. The licensee revised their voltage calculations to account for previously unanalyzed loads. The licensee entered this issue into its corrective action program as problem identification program (PIP) O-14-2280.

The team determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the team identified that the voltages evaluated in the licensee's analysis were nonconservative and could result in lower unanalyzed voltages that could result in connected safety-related loads stalling, becoming damaged, their protective devices tripping, or loads such as battery chargers being below their minimum operating voltages. The team determined that the finding was of very low safety significance (Green) because it was a design deficiency that did not result in a loss of off-site power operability. The team determined that no cross cutting aspect was applicable because this finding was not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

**Significance:** G Mar 21, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct Issues with DC System Voltage Calculations and 120Vac Motor Control Center (MCC) Control Circuit Calculations**

The team identified a Green non-cited violation (NCV), with two examples, of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct conditions adverse to quality. Specifically, the licensee (1) failed to correct voltage calculations for safety-related 4160 volt circuit breaker 125 volt-direct current control circuits and (2) failed to correct voltage calculations for safety-related 120 volt alternating current motor control center control circuits. The above issues were previously identified as NCV 05000269,270,287/2011010-04 and NCV 05000269,270,287/2011010-03, respectively. The incomplete corrective actions were newly entered in the licensee's corrective action program as problem identification program (PIP) reports O-14-2781 and O-14-2811 to track their completion.

The team determined that the performance deficiency was more than minor because it affected the Equipment Performance attribute of the Mitigating Systems Cornerstone, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because the inadequate corrective actions did not result in losses of operability or function for either example. The violation was assigned the cross-cutting aspect of Resolution in the area of Problem Identification and Resolution because the licensee did not take effective corrective actions to address issues in a timely manner. [P3]

Inspection Report# : [2014007](#) (*pdf*)

**Significance:** G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to properly maintain a fire barrier penetration seal**

An NRC-identified non-cited violation (NCV) of 10 CFR 50.48(c) and National Fire Protection Association Standard 805 (NFPA 805), Section 3.11.4, was identified for the licensee's failure to comply with the fire barrier penetration sealing and inspection requirements of the approved fire protection program (FPP). The annular space between the fire barrier opening and the 2" conduit was not properly sealed. The licensee entered the issue in their CAP as PIP O-13-09104, initiated a work order to repair the seal, and implemented an hourly fire watch as required by Oconee Selected Licensee Commitment (SLC) 16.9.5.

The licensee's failure to comply with the fire barrier penetration sealing and inspection requirements of the approved fire protection program was a performance deficiency. This performance deficiency was determined to be more than

minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire), and adversely affected the cornerstone in that the fire barrier could not be relied upon to fully perform its function. The finding was screened using NRC IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” and determined to be of very low safety significance (Green) because safety significant equipment was located a sufficient distance from the degraded penetration and the reactor’s ability to reach and maintain a safe shutdown condition was not impacted. The cause of this finding was determined to have a cross-cutting aspect of H.2(c) in the Resources component of the Human Performance area because the licensee did not ensure that complete, accurate, and up-to-date design documentation and procedures were available because adequate guidance was not included in the maintenance inspection procedures to allow personnel to identify a degraded condition.

Inspection Report# : [2013005](#) (*pdf*)

**Significance:**  Aug 09, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Modifications to fire doors did not receive engineering equivalency evaluations**

Green. An NRC-identified Green non-cited violation (NCV) of Oconee Nuclear Station Units 1, 2, and 3 Renewed Facility Operating License Condition 3.D and NFPA 805 was identified for the licensee’s modification of five fire doors from their tested configurations without performing engineering equivalency evaluations. The licensee entered this issue into the corrective action program as Problem Investigation Program O-13-06900, and declared the door nonfunctional and implemented fire watches in accordance with Selected License Commitment 16.9.5 “Fire Barriers.”

The licensee’s modification of fire doors from their tested configuration without performing engineering equivalency evaluations was a performance deficiency. The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events (i.e., fire) and it adversely affected the cornerstone objective in that the modifications performed on the five fire doors adversely affected the capability of the doors to provide the required level of fire resistance. The finding was determined to be of very low safety significance (Green) because the fire doors would have either provided a two-hour or greater fire endurance rating, or would have provided a minimum of 20 minutes fire endurance protection; and the fixed fire ignition sources, and combustible or flammable materials, were positioned such that the degraded fire doors would not have been subjected to direct flame impingement. A cross-cutting aspect was not assigned because the performance deficiency did not reflect current licensee performance. (Section 1R05.02)

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Aug 09, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to identify ignition sources and target during initial fire scenario development**

An NRC-identified non-cited violation (NCV) of 10 CFR 50.48(c) and National Fire Protection Association Standard 805 (NFPA 805), Section 2.4.3.2, was identified for the licensee’s failure to address in their fire probabilistic safety analysis (also referred to as fire probabilistic risk assessment (PRA)) the risk contributions associated with all potentially risk-significant fire scenarios for a given fire area/fire zone. The licensee entered the issue in the corrective action program (CAP) as Problem Investigation Program (PIP) O-13-08059 and PIP O-13-08061 and implemented fire watches as compensatory measures.

The licensee’s failure to comply with the requirements of 10 CFR 50.48(c) and NFPA 805 was a performance deficiency (PD). The PD was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events (i.e., fire), and adversely affected the cornerstone

because the excluded ignition sources had the potential to impact the ability to achieve safe shutdown. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," and determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," review was required. The inspectors were unable to screen out this finding in the SDP Phase 1 or Phase 2. A senior reactor analyst (SRA) performed a Phase 3 SDP analysis and determined that this finding was of very low safety significance (i.e., Green) because the fire damage would not result in loss of offsite power to the main feeder buses which enabled feed and bleed. The risk was further mitigated by the recovery potential for emergency feedwater (EFW) by local manual control of the steam driven EFW pump and the ability to crosstie EFW to Unit 1 from the other units. The cause of this finding was determined to have a cross-cutting aspect of H.4(c) in the Work Practices component of the Human Performance area because the licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported.

Inspection Report# : [2013004](#) (*pdf*)

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** G Aug 09, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Fire protection program change did not meet Oconee license condition requirements for NFPA 805 chapter three**

An NRC-identified Green finding and associated traditional enforcement Severity Level IV NCV of ONS Renewed Facility Operating License Condition 3.D for Units 1, 2, and 3 were identified for the licensee's failure to implement and maintain in effect all provisions of the approved FPP that comply with 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805." The licensee made a change to the approved FPP involving control of combustible materials when the definition of transient fire loads was revised to exclude FRTW scaffolding materials as transient fire loads, which would not require the licensee to track these items as combustible fire loads. The licensee also failed to submit the FPP change to the NRC for review and approval prior to implementation which impacted the ability of the NRC to perform its regulatory oversight function.

Failure to comply with Oconee Operating License Condition 3.D was a performance deficiency (PD). This PD was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events (i.e. fire), and it adversely affected the cornerstone objective in that the change to the FPP had the potential to adversely affect the ability to achieve and maintain safe and stable plant conditions. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," and determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," review was required. The inspectors determined that a systematic plant-wide assessment effort was beyond the intended scope of the fire protection Phase 1 and Phase 2 SDP. Therefore, a Phase 3 SDP risk analysis was performed by a regional senior reactor analyst (SRA). The fire risk associated with the fire retardant treated wood (FRTW) scaffolding material was mitigated by the FRTW burning characteristics and the few scaffold locations which were in proximity to valid ignition sources and safe shutdown (SSD) target sets. The SRA determined that the risk increase associated with the FRTW scaffolding materials represented an increase in annual core damage frequency of  $<1E-6$ , a finding of very low safety significance. Additionally, the licensee's failure to submit the FPP change to the NRC for review was determined to be a Severity Level IV traditional enforcement violation in accordance with the NRC Enforcement Policy because it impacted the ability of the NRC to perform its regulatory oversight function. The cause of this finding was determined to have a cross-cutting aspect of H.1 (b) in the Decision-Making component of the Human Performance area because the licensee used non-conservative assumptions in the decision making associated with this FPP change.

Inspection Report# : [2013004](#) (*pdf*)

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Aug 09, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to evaluate unapproved combustibles in accordance with procedures**

An NRC-identified Green non-cited violation of Oconee Nuclear Station Units 1, 2, and 3 Renewed Facility Operating License Condition 3.D was identified for the licensee’s failure to follow procedures for the control of transient combustible materials. The team identified five examples where the licensee failed to follow procedure NSD 313, “Control of Transient Fire Loads,” in that unapproved combustible materials were stored in fire areas/fire zones without proper evaluation and without appropriate compensatory actions being implemented. The licensee entered these issues into the corrective action program as Problem Investigation Program documents O-13-07896, O-13-07897, O-13-07989, O-13-08051, and O-13-08459; and initiated immediate corrective actions to remove the unapproved combustibles from the identified fire areas/fire zones.

The licensee’s failure to follow procedure NSD 313 for storage of transient combustibles in fire areas/fire zones was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e. fire), and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions. The cause of this finding was determined to have a cross-cutting aspect of H.4(b) in the Work Practices component of the Human Performance area, because the licensee did not define and effectively communicate expectations regarding procedural compliance and personnel did not follow procedures.

Inspection Report# : [2013007](#) (*pdf*)

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## Barrier Integrity

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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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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