

## Oconee 3

### 3Q/2012 Plant Inspection Findings

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## Initiating Events

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## Mitigating Systems

**Significance:** G Sep 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to maintain accurate pre-fire plans**

An NRC-identified non-cited violation of the Oconee Units 1, 2, and 3 renewed facility operating licenses, condition 3.D. was identified for the licensee's failure to maintain accurate pre-fire plans in areas that contain safety related equipment. Discrepancies such as failure to identify compressed gas cylinder and chemical storage areas, fire extinguisher locations, and physical building characteristics were identified in 79 fire zone pre-fire plans. The licensee modified the pre-fire plans to correct the deficiencies. This violation was entered into the licensee's corrective action program (CAP) as PIP O-12-10817.

The performance deficiency (PD) was more than minor because it was associated with the Mitigating Systems Cornerstone Attribute of Protection Against External Events (Fire) and adversely affected the cornerstone objective in that inaccurate pre-fire plans could impact the fire brigade's ability to effectively fight a fire. The inspectors determined that the finding was of very low safety significance (Green) because an alternate means of safe shutdown was available, the fire brigade consisted of plant personnel familiar with the plant layout and associated hazards, and appropriate firefighting equipment was available in each area. The cause of the PD was directly related to the aspect of complete, accurate, and up-to-date procedures of the Resources Component in the cross cutting area of Human Performance because the licensee failed to ensure that other personnel were assigned the responsibility to maintain the pre-fire plans. [H.2(c)] (1R05)

Inspection Report# : [2012004](#) (*pdf*)

**Significance:** G Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to perform a calculation to determine site PMP ponding levels in a timely manner**

An NRC-identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for the licensee's failure to implement corrective actions for a condition adverse to quality. The licensee did not develop a calculation to determine the maximum on-site water level resulting from a Probable Maximum Precipitation (PMP) event in a timely manner. Corrective actions included development of a calculation bounding the expected water level resulting from a PMP event. This violation is in the licensee's corrective action program (CAP) as PIP O-12-7994.

The performance deficiency (PD) was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and adversely impacted the cornerstone objective because there was

reasonable doubt that plant equipment was adequately protected from the increased water level and therefore had the potential to result in a loss of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because the licensee subsequently demonstrated that the water entering the plant structures would not have resulted in the loss of safety-related or risk-significant equipment. This finding does not have a cross-cutting aspect because the performance deficiency was not indicative of current plant performance. (Section 1R01)

Inspection Report# : [2012003](#) (*pdf*)

**Significance:**  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to follow the engineering change process**

An NRC-identified non-cited violation of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, was identified for the licensee's failure to follow EDM 601, Engineering Change Manual, during the design and construction of the Protected Service Water (PSW) ductbank / manhole structure. As a result, rainwater accumulation during a Probable Maximum Precipitation (PMP) event could enter the Auxiliary Building (AB). Corrective actions included sealing penetrations, installation of an isolation valve, revising procedures, and conducting training. This violation is in the licensee's CAP as PIPs O-12-1317, O-12-1876, O-12-1906 and O-12-2443.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Protection Against External Factors - Flooding and adversely affected the cornerstone objective in that water from a PMP event could enter the AB and adversely impact safety-related and / or risk-significant equipment. The licensee was required to perform extensive modeling and calculations to determine what the impact from a PMP event would be on the SSC's located in the lower elevations of the AB. The finding was of very low safety significance due to the high likelihood that the source of the water leaking into the AB would be correctly identified and isolated prior to the loss of safety-related equipment due to the flood. The cause of the finding was directly related to the aspect of ensuring supervisory oversight of work activities such that nuclear safety is supported of the Work Practices component in the cross-cutting area of Human Performance because the licensee failed to ensure that the appropriate level of supervisory and management oversight was applied during design, modification and construction of Manhole 7. [H.4(c)] (Section 1R01)

Inspection Report# : [2012003](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: NRC

Item Type: FIN Finding

**Failure to Adequately Test Safety-Significant Medium Voltage Cables**

An NRC-Identified finding was identified for the licensee's failure to develop an adequate procedure for performing cable degradation testing on medium voltage cables. Consequently, a degraded condition of one of the conductors from CT-5 to the standby buses was not addressed for approximately 18 months and subsequently failed accruing approximately 30 days of unavailability to replace the cable.

The performance deficiency (PD) was determined to be more than minor as it affected the Mitigating Systems cornerstone attribute of equipment performance in that failure to identify the degraded condition resulted in unplanned unavailability of the CT-5 power path. The finding was of very low safety significance because the "Y" phase cable from CT-5 was capable of performing its function from June 2010 until December 22, 2011. The cause of this finding was directly related to the implementation of operating experience aspect of the Operating Experience component of

the Problem Identification and Resolution cross-cutting area, in that, the licensee failed to incorporate industry guidance to establish test acceptance criteria for degradation of power cables insulation. [P.2(b)]

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Procedure for Installation of Safety-related Control Cables**

An NRC-Identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified for the licensee's failure to develop adequate procedures governing the installation of safety related control cables. The work package did not contain the maximum tension limits and the specified testing method was inadequate to demonstrate that control cables had not been damaged during the cable pull. The licensee revised TI/0/A/3000/030, PSW Cable Pulling in Duct Banks Using Mechanical Device, and re-tested the control cable ensure its functional integrity.

The performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective in that it could represent an indeterminate functional condition for proper control functions for safety-related equipment operation in the PSW and the SSF. The finding was of very low safety significance because it did not result in the loss of any system safety function. The cause of the finding directly involved the cross-cutting aspect of appropriate planning of work activities in the Work Control component of the Human Performance area, in that the licensee failed to implement procedures which established planned contingencies, compensatory actions, and abort criteria. [H.3(a)]

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: NRC

Item Type: FIN Finding

**Failure to Ensure UFSAR described Flood Protection Measures In Place**

An NRC-Identified finding was identified for the licensee's failure to ensure the Oconee UFSAR-described Auxiliary Building (AB) flood protection measures were maintained. Penetrations were not included in a surveillance program to verify below-grade penetrations would not allow flooding of the AB existed below the design basis 796.5 foot mean sea level (msl) elevation.

The performance deficiency was more than minor because if left uncorrected, it could lead to a more significant safety concern, in that, other onsite activities such as excavation work exterior to the AB walls could provide a pathway for flood waters to enter the AB through the uncontrolled penetrations causing the loss of accident mitigation systems. The finding was of very low safety significance because an actual loss of operability or functionality did not occur. The cause of the finding was directly related to the appropriate corrective actions aspect of the Corrective Action Program component in the area of Problem Identification and Resolution because the licensee failed to correct the O-310 K series to identify that all external AB walls as flood barriers. [P.1(d)]

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Dec 16, 2011

Identified By: NRC

Item Type: VIO Violation

**Failure to Promptly Identify and Correct a Condition Adverse to Quality Involving the Environmental**

### **Qualification of Limatorque Valve Actuators**

10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, requires in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, and non-conformances are promptly identified and corrected.

10 CFR 50.49(f) requires that each item of electric equipment important to safety shall be qualified by one of the following methods: (1) Testing an identical item of equipment under identical conditions or under similar conditions with a supporting analysis to show that the equipment to be qualified is acceptable, (2) Testing a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable, (3) Experience with identical or similar equipment under similar conditions with a supporting analysis to show that the equipment to be qualified is acceptable, or (4) Analysis in combination with partial type test data that supports the analytical assumptions and conclusions.

Contrary to the above, from October to November 2010 (Unit 3 refueling outage), from April to June 2011 (Unit 1 refueling outage), and in November 2011 (Unit 2 refueling outage), the licensee failed to establish measures to assure that a condition adverse to quality, identified by the NRC in NCV 2010004-03, was promptly identified and corrected. Specifically, the licensee missed reasonable opportunities during each Unit's refueling outage to confirm the population of Limatorque actuators that were potentially installed in an unqualified configuration in order to properly assess the extent of the non-conforming condition discussed in NCV 2010004-03 and take appropriate corrective actions. Consequently, an unknown population of Limatorque actuators in Units 1, 2 and 3 remained in a configuration that was not qualified in accordance with one of the methods described in 10 CFR 50.49(f).

This violation is associated with a Green Significance Determination Process finding.

Inspection Report# : [2011008](#) (*pdf*)

**Significance:**  Oct 07, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Perform an Adequate Operability Evaluation for the SSF**

A NRC-identified NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified when the licensee failed to perform an adequate operability evaluation and failed to perform a 50.59 evaluation for a compensatory measure for the SSF ASW subsystem in accordance with NSD 203.

The failure to perform an adequate operability evaluation for the SSF ASW subsystem in accordance with NSD 203 was a PD. There were two examples of this PD. The first example was more than minor because it was associated with the Design Control attribute of the Mitigating System Cornerstone and adversely affected the cornerstone objective in that the licensee failed to assure the SSF pressurizer heater breakers would function under expected environmental conditions before declaring the SSF operable. The second example was more than minor because it was associated with the Procedure Quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective in that the compensatory measure used to support the SSF as OBDN required prior NRC review and approval. The finding was determined to be of very low safety significance (Green) because the finding because operability of the SSF ASW subsystem was not affected. The PD was related to the cross-cutting aspect of using conservative assumptions in decision-making in the Decision-Making component of the Human Performance cross-cutting area in that the licensee declared the SSF OBDN without validated testing to demonstrate the SSF pressurizer heater breakers would function under design basis conditions and relied on an unapproved analysis method to support a compensatory measure. [H.1(b)]

Inspection Report# : [2011018](#) (*pdf*)

## Barrier Integrity

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Perform Adequate Surveys to Identify Potential Radiological Hazards**

A Green self-revealing, non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to perform adequate surveys to verify radiological conditions within the Unit 3 Reactor Building (RB). This resulted in a worker unknowingly entering an area with dose rates exceeding Locked High Radiation Area (LHRA) conditions, i.e., dose rates exceeding 1,000 millirem per hour (mrem/hr) at 30 centimeters (cm). Corrective actions included surveying all plant areas for proper posting and control in which no additional problem areas were identified, reviewing jobs that had the potential for dose rate changes, and reviewing electronic dosimeter (ED) trends during each shift.

The inspectors determined that the failure to identify the LHRA through adequate surveys that could have revealed changing radiological conditions was a performance deficiency. This performance deficiency was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process (Monitoring and RP Controls) and adversely affected the cornerstone objective in that failure to identify significant sources of radiation could lead to unintended occupational exposures. The finding was determined to be of very low safety significance (Green) because it was not related to As Low As is Reasonably Achievable (ALARA) Planning and the ability to assess dose was not compromised. The finding was directly related to the cross-cutting aspect of Appropriate Coordination of Work Activities in the Work Control component of the Human Performance area because the licensee failed to identify the change in radiological conditions. [H.3(b)].

Inspection Report# : [2011005](#) (*pdf*)

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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.

## Miscellaneous

**Significance:** N/A Dec 16, 2011

Identified By: NRC

Item Type: FIN Finding

### **2011 Oconee PI&R Summary**

The inspectors concluded that, in general, problems were properly identified, prioritized, evaluated, and corrected. The licensee was generally effective at identifying problems and entering them into the corrective action program (CAP) for resolution, as evidenced by the number of issues entered into the Problem Investigation Program (PIP) during the review period and the low safety significance of deficiencies identified by the NRC that had not been previously identified by the licensee. In addition to the open trend discussed in NRC Inspection Report 2011003 associated with inconsistent initiation of PIPs and describing plant issues in sufficient detail and clarity, the inspectors identified various observations, including performance deficiencies of minor significance, where plant issues were not adequately identified in the CAP via PIP documents. Generally, prioritization and evaluation of issues, formal root cause evaluations for significant problems, and corrective actions specified for problems were consistent with licensee CAP procedures. Overall, corrective actions developed and implemented for issues were generally effective and implemented in a timely manner. However, the inspectors identified some weaknesses in the problem evaluation and corrective action areas, including a finding of very low safety significance and multiple minor performance deficiencies, where the licensee either failed or experienced challenges to meet their CAP procedure requirements and guidelines.

The inspectors determined that overall, audits and self-assessments were adequate in identifying deficiencies and areas for improvement in the CAP, and appropriate corrective actions were developed to address the issues identified. The inspectors identified one observation in this assessment area concerning the licensee's process to follow-up regulatory issues. Operating Experience (OE) usage was found to be generally acceptable and integrated into the licensee's processes for performing and managing work, plant operations, and cause evaluations. However, the inspectors identified some weaknesses in the effectiveness of the licensee's OE program.

Based on discussions and interviews conducted with plant employees from various departments, the inspectors determined that personnel at the site felt free to raise safety concerns to management and use the CAP to resolve those concerns.

Inspection Report# : [2011008](#) (*pdf*)

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