Oconee 2
1Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 18, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Postulated Fire Affecting High Pressure Injection Pump Did Not Receive a VFDR Evaluation
Green. The NRC identified a Green NCV of 10 CFR 50.48(c) and National Fire Protection Association Standard (NFPA) 805, Section 2.4.2.4 for the licensee's failure to perform an adequate engineering analysis to determine the effects of fire on the ability to achieve the nuclear safety performance criteria, and consequently, did not add an associated variation from deterministic requirements (VFDR) into the Fire probabilistic risk assessment (PRA). Specifically, the licensee's Nuclear Safety Capability Assessment (NSCA) failed to identify cables in the turbine building (TB) that could prevent the operation of the High Pressure Injection (HPI) Pumps. This item was entered into the corrective action program (CAP) as action request (AR) 02011673, and the licensee implemented compensatory measures in the form of hourly fire watches.

The performance deficiency (PD) was more than minor because it was associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e. fire), and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee's failure to analyze the effects of fire damage on the HPI cables in the TB could result in fire damage adversely affecting the ability to achieve and maintain safe and stable conditions. Using the guidance of IMC 0609, App. F, the finding was screened as Green because the finding did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event (Task 1.4.5-B). Across cutting aspect in the area of Human Performance, Consistent Process because the licensee did not use a consistent, systematic approach to make decisions, and did not incorporate appropriate risk insights (H.13). (Section 1R05.06)
Inspection Report# : 2016007 *(pdf)*

Significance: G Dec 31, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Accomplish Activities Affecting Quality in Accordance With Station Instructions and Procedures Which Resulted in a Valid AFIS Actuation
• Green. A Green self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to accomplish activities affecting quality in accordance with instructions and procedures established by the licensee. Specifically, the failure of station personnel to correctly close the Weidmuiller links on the feedwater control valves, in accordance with procedure PT/2/A/0152/020, "AFIS Circuitry Test," Enclosure 13.2, "AFIS Circuitry Verification and Valves Stroked on Refueling Frequency During FDW System Shutdown," Steps 1.22 and 1.23, caused feedwater flow oscillations. The feedwater flow oscillations resulted in a valid automatic feedwater isolation signal (AFIS) initialization. The licensee entered this issue into their

corrective action program (CAP) as nuclear condition report (NCR) 01939072. The licensee verified all AFIS links on all units were closed and modified station procedures to include additional detail on ensuring that the links are fully closed.

The licensee's failure to follow procedure PT/2/A/0152/020, "AFIS Circuitry Test," during the last AFIS circuitry testing on November 17, 2013 was a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance and human performance attributes of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure of station personnel to correctly close the Weidmuiller links on the feedwater control valves caused feedwater flow oscillations resulting in a valid AFIS initialization. Using NRC IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2 "Mitigating System Screening Questions" Part B, dated July 1, 2012, the inspectors determined the finding to be of very low safety significance (Green) since the finding did not result in the loss of equipment specifically designed to mitigate a loss of feedwater flow. Specifically, the AFIS initiation was a valid actuation and as such, there was no loss of safety function. The finding had a cross-cutting aspect of procedure adherence in the area of human performance, because the licensee did not adequately follow processes, procedures, and work instructions (H.8). (Section 4OA3)

Inspection Report# : 2015004 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: FIN Finding
Inadequate Design Inputs for PSW Testing and Engineering Evaluations
• Green. The NRC identified a finding for the licensee's failure to verify the adequacy of design inputs used in protected service water (PSW) testing and engineering evaluations to validate that the PSW system could perform its design function with respect to Milestone 4 of order EA-13-010, in accordance with the Duke Energy Carolinas Topical Report, Quality Assurance Program. The licensee entered this issue into their corrective action program as problem investigation program reports (PIPs) O-15-03630, O-15-03527, O-15-03529, O-15-03631, O-15-03530, NCR 01930521, NCR 01929161, and PIP 0-15-4544.

The performance deficiency was more than minor because it was associated with the design control attribute and adversely affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the errors identified in the hydraulic flow modeling software, Calculation OSC-9595, "Protected Service Water (PSW) Hydraulic Model," Rev. 6, and supporting documentation required significant revision and reanalysis in order to determine that the PSW system was capable to meet its design flow requirements for short term secondary heat removal capability. The inspectors determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of avoid complacency within the human performance area. Specifically, the licensee failed to utilize standard human error prevention tools to ensure critical reviews were performed for the PSW testing and engineering evaluations supporting the completion of Milestone 4 of order EA-13-010 dated July 1, 2013. [H12]

Inspection Report# : 2015002 *(pdf)*

Significance: G Jun 30, 2015

Identified By: NRC
Item Type: FIN Finding
Inadequate Acceptance Criteria for PSW Pump Surveillance Testing
Green. The NRC identified a finding for the licensee's failure to ensure that appropriate acceptance criteria was used during testing to verify PSW primary pump functionality in accordance with the Duke Energy Carolinas Topical Report, Quality Assurance Program. The licensee entered this issue into their corrective action program as PIP O-15-03190.

The performance deficiency was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, PSW pump surveillance PT/0/A/0500/001, "Protected Service Water Primary and Booster Pump Test," Rev. 0, did not incorporate acceptance limits established by design documents, and as a result, the licensee could unknowingly consider the PSW primary pump functional beyond 7 percent pump degradation. The inspectors determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), and the SSC maintained its functionality. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of avoid complacency within the human performance area. Specifically, the licensee failed to utilize standard human error prevention tools to ensure critical reviews were performed for PSW pump testing. [H.12]
Inspection Report# : 2015002 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: FIN Finding
Failure To Translate The Design Basis Into Procedures Used To Test The HPI Motor Coolers
Green. The NRC identified a finding for the licensee's failure to translate the design requirements of the high pressure injection (HPI) pump motor coolers into the procedure used to verify adequate flow from PSW, in accordance with the Duke Energy Carolinas Topical Report, Quality Assurance Program. Specifically, the licensee failed to incorporate the fouling factor assumed in Calculation OSC-2042, "HPI Pump Motor Upper Bearing Cooling Report," Rev. 8, into Procedure TT/1/A/05000/008, "High Pressure Injection Motor Cooler Flow Test from PSW," Rev. 2. The licensee entered this issue into their corrective action program as PIPs O-15-03608 and O-15-04544.

The performance deficiency was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, the low pressure service water (LPSW) and PSW flow test acceptance criteria could have been met without ensuring adequate heat transfer could be provided from the HPI motor coolers to PSW. The inspectors determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of teamwork within the human performance area. Specifically, the licensee failed to demonstrate a strong sense of collaboration and cooperation in connection with projects to ensure critical reviews were performed for the procedures used to test the HPI motor coolers. [H.4]

Inspection Report# : 2015002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Adequately Maintain Controlled Procedures in Emergency Response Facilities
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR), Part 50.47(b)(16), for the licensee's failure to maintain the effectiveness of its emergency plan by ensuring procedures for use by the emergency response organization are maintained and up-to-date. Specifically, responsibilities for emergency plan implementing procedure distribution were not adequately maintained in multiple emergency response facilities because the procedures were not of the correct revision and may have been used had an emergency been declared. After the NRC inspectors informed the licensee of the discrepancy, the licensee entered the issue into their CAP as action request (AR) 01959550. The licensee's immediate corrective actions were to perform an extent of condition review of all site EP procedures, including the corporate office and the other legacy Duke sites, and replace the procedures with the correct revision.

The licensee's failure to adequately maintain controlled procedures in the emergency response facilities was a performance deficiency. The inspectors determined that the performance deficiency was more than minor because the performance deficiency was associated with the procedure quality attribute of the emergency preparedness (EP) cornerstone and adversely affected the associated cornerstone objective. The finding was evaluated using the EP significance determination process and was identified as having very low safety significance because it was a failure to comply with NRC requirements and was not a loss of the planning standard function. The finding was associated with a cross-cutting aspect in the documentation component of the human performance area because the licensee failed to maintain complete, accurate, and up-to-date documentation (H.7). (Section 1EP5)

Inspection Report# : 2015004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

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

Last modified : July 11, 2016