

Oconee 1

1Q/2015 Plant Inspection Findings

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*)

Inspection Report# : [2015008](#) (*pdf*)

Mitigating Systems

Significance: **G** Dec 29, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Keowee Hydro Unit 2 Inoperable for Longer Than Allowed TS Outage Time

•Green A self-revealing Green NCV of Oconee Nuclear Station Technical Specification (TS) 3.8.1, “AC Sources – Operating,” was identified for Keowee Hydro Unit 2 being inoperable for longer than allowed TS outage time. The licensee modified Keowee Hydro Unit 2 electrical protection circuitry with a faster response relay which was susceptible to an existing degraded system condition and ultimately caused Keowee Hydro Unit 2 to be inoperable. The licensee initiated PIP-O-13-09152 in order to determine future corrective actions. Continued non-compliance does not present an immediate safety concern because the inspectors assessed this as a very low safety significance issue.

The licensee's failure to properly evaluate a modification to the electrical control circuit of the governor oil system, which resulted in Keowee Hydro Unit 2 being inoperable for longer than allowed TS outage time, was a performance deficiency. The issue is more than minor because it was associated with the equipment performance attribute of the mitigating system cornerstone 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 (i.e., core damage). Specifically, the modification of the governor oil system, including the addition of the 86E2X governor TXS catastrophic relay, resulted in Keowee Hydro Unit 2 being inoperable for longer than allowed TS outage time. The finding was screened in accordance with NRC IMC 0609, "Significance Determination Process (SDP)," Attachment 4 and Attachment A and determined to require a detailed risk evaluation. A regional Senior Reactor Analyst performed a risk analysis of the performance deficiency which was found to be Green ($CDF < 1E-6/year$). The dominant accident sequence was a loss of offsite power where Keowee Unit 1 fails independently and unrelated to the performance deficiency and power is not successfully restored by Oconee operators. The influential factors in the Green result were the limited exposure time (19 days) and the ability to quickly restore power to the unit via the Lee Station gas turbines via the Fant Line.

This finding was determined to have a cross-cutting aspect in the problem identification and resolution cross cutting area because the licensee's organization failed to take effective corrective actions to address the issue in a timely manner commensurate with its safety significance. Specifically, the licensee failed to take effective corrective actions to address system interactions (i.e. high vibrations) which ultimately had an adverse effect upon modifications to the governor oil system of the Keowee Hydro Unit 2. (P.3) (Section 4OA3.1)

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

Barrier Integrity

Emergency Preparedness

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

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