

# Catawba 1

## 3Q/2016 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**Failure to adequately implement RHR operating procedure.**

Green: A self-revealing Green NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," was identified for the licensee's failure to adequately implement a procedure for the operation of the Unit 1 residual heat removal (RHR) system. As a result, the breaker for the 1B RHR pump loop suction valve was left open, which resulted in the 1B train of emergency core cooling system (ECCS) being inoperable for greater than its TS allowed outage time. The licensee took immediate corrective actions to close the breaker and restore operability of the 1B train ECCS. The licensee entered this issue into their corrective action program as condition report (CR) 2014866.

The licensee's failure to adequately implement RHR system operating procedure, OP/1A/6200/004, "Shutdown and Alignment for Standby Readiness," prior to plant startup was a performance deficiency (PD). The PD was determined to be more than minor because it was associated with the configuration control attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance deficiency resulted in the breaker for the 1B RHR pump loop suction valve being left open and the 1B train of ECCS being inoperable for greater than its TS allowed outage time. The inspectors evaluated the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 1, Section B and determined the finding to be of very low safety significance (Green) because the finding did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time because 1ND37A (redundant decay heat removal (ND) 1B pump suction from reactor coolant (NC) Loop C) was still be able to provide the required permissive signal to open 1ND136B (ND supply to safety injection (NI) pump 1B). The performance deficiency had a cross-cutting aspect of teamwork in the area of human performance because operations did not communicate and coordinate activities associated with the RHR system to ensure nuclear safety is maintained. (H.4) (Section 1R15)

Inspection Report# : [2016002](#) (*pdf*)

**Significance:** G Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to implement effective corrective actions to prevent DG connecting bearing rod rotations.**

Green: An NRC identified Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to implement effective corrective actions to prevent repetition of a significant condition adverse to quality regarding connecting rod bearing rotations on the 1A diesel generator (DG). Specifically,

the number 6 connecting rod was found rotated approximately 190 degrees following a 24 hour diesel run. The licensee replaced the rotated bearing and implemented modifications on all four Catawba DGs to minimized voiding in the engine driven lube oil pump suction piping. The licensee entered this issue into their corrective action program as CR 2021799.

The licensee's failure to identify a lubricating oil design discrepancy during the root cause investigation for 1A and 1B DG bearing rotations in 2014 was a PD. The PD was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that that respond to initiating events to prevent undesirable consequences. Specifically, the rotation of the 1A DG number 6 bearing resulted in approximately 60 hours of unavailability to replace the bearing. The finding was determined to be of very low safety significance, Green, based on the Phase 1 screening criteria found in IMC 609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," as the finding did not represent a loss of a system and/or function, and did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time. This finding had a cross-cutting aspect of evaluation, as described in the problem identification and resolution cross-cutting area because the licensee failed to fully evaluate diesel lube oil system discrepancies that contributed to DG connecting rod bearing rotations during the root cause investigation of previous bearing rotation events in 2014. (P.2) (Section 40A2.3)

Inspection Report# : [2016002](#) (pdf)

**Significance:** G Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**Failure to Adequately Implement In-service Test Procedure for the Unit 1 Standby Makeup Pump**

Green. A Green self-revealing non-cited violation of Technical Specification (TS) 5.4.1, "Procedures," was identified for the licensee's failure to adequately implement their in-service test procedure for the Unit 1 standby makeup pump (SMP). Operators performed procedure steps out of sequence which resulted in the pump's discharge relief valve lifting, requiring valve replacement. The licensee entered this issue into their corrective action program as nuclear condition report (NCR) 1954266.

The performance deficiency was considered to be more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the SMP was unavailable to perform its safety function during unplanned testing and maintenance. The internal events risk contribution was determined by the inspectors to be 3E-7 and thus required a senior reactor analyst to review for external events and large early release frequency (LERF) to ensure the finding was below the Green/White threshold. The external events contribution was determined to be 5E-7 and thus the total risk was 8E-7 and core damage frequency (CDF) was determined to be the limiting metric. Consequently the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect of avoid complacency, as described in the human performance cross-cutting area, because the operators failed to implement appropriate error reduction tools such as formal three-way communications while performing the SMP surveillance procedure. [H.12] (Section 1R22)

Inspection Report# : [2015004](#) (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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