

Quad Cities 1

4Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Aug 26, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Provide Appropriate Operating Instructions for Aligning a Battery Charger to the Station Black-Out Diesel Generator (Section 1R17.1.b.)

Green. A finding of very-low safety significance (Green) and an associated NCV of Technical Specification 5.4.1.a, "Procedures," was self-revealed on December 2, 2014 when procedural guidance failed to be implemented as written. Specifically, Procedure QCOA 6100-17, Revision 12, "Loss of SBO [Station Black-Out Normal 13.8kV Transformer T42R-6 Feed to 4kV Bus 61 and 71]," included inappropriate guidance to cross-tie Bus 61 and Bus 71. The licensee's procedural guidance as written were technically infeasible and could not be implemented due to breaker interlocks caused by the digital control system interface that precluded the 4kV buses 61 and 71 from being cross-tied. The licensee entered this finding into their Corrective Action Program as Issue Report 2487426 and Issue Report 2706435 and removed the guidance to cross-tie the 4KV buses from the procedure.

The performance deficiency was determined to be more-than-minor because it was associated with the Mitigating System cornerstone attribute of design control 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). The finding screened as of very-low safety significance (Green) because it did not result in the loss of operability or functionality of any structure, system, or component. Specifically, using other procedural guidance, operators were able to start both station black-out diesels within the hour. The inspectors did not assign a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance. (Section 1R17.1.b.)

Inspection Report# : [2016008](#) (*pdf*)

Significance: G Aug 26, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Target Rock Relief Valve Accumulator per ASME Code (Section 1R17.2.b.)

Green. The inspectors identified a finding of very-low safety significance (Green) and an associated NCV of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion III, "Design Control," for licensee's failure to assure that quality standards for the Target Rock Relief valve accumulator were specified and included in the design documents and that deviations were identified and controlled. Specifically, Engineering Change (EC 394119) fabricated the replacement Unit 2 Target Rock valve accumulator to American National Standard B31.1 Power Piping code requirements instead of the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII requirements, without adequate justifications. The licensee captured this issue in their Corrective Action Program as IR 02708406 to evaluate the appropriate corrective actions and revise documentation as required.

The performance deficiency was determined to be more-than-minor because it was associated with the Mitigating System cornerstone attribute of design control and adversely affected the cornerstone objective to ensure the availability, and reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as of very-low safety significance (Green) because it did not result in the loss of operability or functionality of any affected structure, system, or components. This finding has a cross-cutting aspect in the area of Human Performance in the area of Design Margin because the licensee failed to maintain equipment within its design margins. (Section 1R17.2.b.) [H.6]

Inspection Report# : [2016008](#) (*pdf*)

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

FAILURE TO IDENTIFY CONDITIONS ADVERSE TO QUALITY

The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to identify a condition adverse to quality.

Specifically, the licensee failed to identify the installation of the low pressure coolant injection (LPCI) loop-select differential pressure indicating switches (DPISs) on both units beyond their performance centered maintenance template recommended replacement frequency and beyond their environmental qualification (EQ) service life established in EQ binder EQ 83Q as conditions adverse to quality (CAQ) in their corrective action program (CAP).

The licensee's corrective actions included entering the non conforming conditions into the CAP (Issue Report 2663100) and evaluating the CAQs for operability. The licensee determined the current DPISs were operable but non conforming, and replaced all remaining LPCI loop select DPISs.

The failure to identify CAQs within the CAP was determined to be more than minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to identify when safety-related structures, systems, or components (SSCs) are beyond their qualified life could lead to an SSC not being able to perform its specified safety function. The finding was screened against the Mitigating Systems Cornerstone and determined to be of very low safety significance because the SSC maintained its operability. The inspectors determined this finding affected the cross cutting area of problem identification and resolution, in the aspect of Identification, which states, "The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program." Specifically, the licensee failed to document a condition adverse to quality related to the LPCI loop select DPISs on both units in the CAP in a timely manner [P.1].

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

Barrier Integrity

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

FAILURE TO MAINTAIN PARAMETERS WITHIN LIMITS OF TS 3.6.2.5 AND 3.6.3.1

The inspectors identified a finding of very low safety significance and an associated non-cited violation of Technical Specifications (TS) 3.6.2.5 and 3.6.3.1 for the licensee's failure to take actions required by TS 3.6.2.5 and 3.6.3.1.

Specifically, on May 25, 2016, the licensee failed to restore the Unit 2 drywell-to-suppression chamber differential pressure and primary containment oxygen concentration to within the TS specified limits, or reduce power below 15

percent rated thermal power as required by TS 3.6.2.5 and 3.6.3.1, Conditions A and B. The licensee's corrective actions included restoring both parameters to within their specified limits on May 25, 2016. The violation was entered into the licensee's corrective action program as Issue Report 2677621.

The performance deficiency was determined to be more than minor and a finding because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to maintain drywell-to-suppression chamber differential pressure and primary containment oxygen concentration within their specified limits had the potential to lead to stresses that could challenge the structural integrity of the containment and/or lead to a combustible mixture inside the Unit 2 drywell following a loss of coolant accident, either of which could have challenged the assumptions of the safety analyses. The finding was screened against the Barrier Integrity Cornerstone and was determined to be of very low safety significance by the Region III senior reactor analyst using the insights from IMC 0609, Appendix H, "Containment Integrity Significance Determination Process," Table 6.2, "Phase 2 Risk Significance—Type B Findings at Full Power," because the duration of the condition was shorter than 3 days. The inspectors determined this finding affected the cross-cutting area of human performance in the aspect of Conservative Bias, which states, "individuals use decision making practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop." Specifically, the licensee failed to exercise prudent judgment when they raised power above 15 percent prior to meeting TS Limiting Condition for Operation 3.6.2.5 and 3.6.3.1 while still in the MODE of Applicability (MODE 1) [H.14].

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

Significance: G Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

FAILURE TO CONTROL DEVIATION FROM EQ STANDARD RESULTS IN LIMIT SWITCH SUBMERGENCE

A finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was self-revealed on February 2, 2016, when the operators received an alarm due to a steam leak in the Unit 1 main steam isolation valve room which resulted in the limit switch compartment for Unit 1 reactor core isolation cooling (RCIC) system motor-operated valve (MOV), MO 1-1301-17 (outboard primary containment steam isolation valve), becoming submerged with water. Specifically, the licensee failed to ensure that deviations from design standard, "Environmental Qualification Standard 74Q (EQ-74Q)," were controlled during original installation of MO 1-1301-17 such that the valve would not be subjected to a spray or submergence environment. The licensee documented the issue in their corrective action program under Issue Report 2625523. Corrective actions included a temporary repair of the steam leak, removal of water from the limit switch compartment, and compensatory measures that included daily monitoring for steam leaks in the Unit 1 main steam isolation valve room. In addition, the licensee performed an extent of condition review of other valves in the main steam isolation valve room. Planned corrective actions included installing t-drains or weep holes in MOVs that the licensee deemed susceptible to spray or submergence.

The performance deficiency was determined to be more than minor and a finding because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to control any environmental qualification design deviations had the potential to impact the ability of MO 1-1301-17 to close on an isolation signal and prevent radioactive releases to the environment. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Appendix A, "The Significance Determination Process for Findings at Power," issued June 19, 2012. The inspectors determined the finding to be of very low safety significance (Green) in accordance with Exhibit 3, "Barrier Integrity Screening Questions," because the inspectors answered "No" to all questions in Section B of Exhibit 3. This finding did not have a cross-cutting aspect because the performance deficiency was not indicative of current performance.

Inspection Report# : [2016001](#) (pdf)

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

FAILURE TO IDENTIFY STRUCTURES, SYSTEMS, AND COMPONENTS AS SAFETY-RELATED

A finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion II, “Quality Assurance,” was identified by the inspectors for the licensee’s failure to identify the structures, systems, and components to be covered by the quality assurance program, in that they did not properly classify a component of the control room emergency ventilation system as safety related. The licensee documented the issue in their corrective action program under Issue Report 2596725. Immediate corrective actions included replacing Differential Pressure Switch (DPS) 0–5795–50 and revising the control room ventilation procedure to allow operators to disable the interlock between the ‘A’ and ‘B’ trains of the control room emergency ventilation system. The procedure change eliminated the need for the DPS to be classified as safety-related (and therefore corrected the violation) because in the event of a failure of the DPS, the system would still be able to perform its safety function. The performance deficiency was determined to be more than minor and a finding because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the ‘B’ train of the control room emergency ventilation system is a habitability system that is provided to ensure control room operators are able to remain in the control room and operate the plant safely and to maintain the plant in a safe condition under accident conditions. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Appendix A, “The Significance Determination Process for Findings at Power,” issued June 19, 2012. The inspectors determined the finding to be of very low safety significance (Green) in accordance with Exhibit 3, “Barrier Integrity Screening Questions,” because the finding only represented a degradation of the radiological barrier function provided for the control room and did not represent a degradation of the barrier function of the control room against smoke or toxic atmosphere. This finding did not have a cross-cutting aspect because the performance deficiency was not indicative of current performance.

Inspection Report# : [2016001](#) (pdf)

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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