

Harris 1

2Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Implement Adequate Corrective Actions

A self-revealing green finding was identified for failure to implement adequate corrective actions for the repeated failure of PS-4175, low pressure steam inlet crossover pressure switch in accordance with licensee procedure AD-PI-ALL-0100, Corrective Action Program. Specifically, on multiple occasions the licensee failed to install a pressure switch rated for design conditions on the Main Turbine which led to an unplanned reactivity addition, when PS-4175 failed open. The licensee entered this into their corrective action program (CAP) as action request (AR) 755621 and took immediate actions to reduce power to less than 100 percent. Reactor power reached a maximum value of 100.5 percent.

Failure to implement adequate corrective action for the repeated failure of pressure switch PS-4175 in accordance with licensee procedure AD-PI-ALL-0100 was a performance deficiency. The performance deficiency was determined to be more than minor because if left uncorrected the performance deficiency had the potential to lead to a more significant safety concern. Specifically, if not for the manual actions taken by the operators to insert control rods, the reactivity addition would have continued and would have ultimately resulted in a reactor trip on high neutron flux. Using IMC 0609, "Significance Determination Process" Attachment 4, Initial Characterization of Findings, and Appendix A, The SDP for Findings At-Power, (June 19, 2012), the inspectors determined the finding was a contributor as a Transient Initiator to the Initiating Events cornerstone. The inspectors determined the finding was of very low safety significance (Green) because it did not result in a reactor trip and it did not cause the loss of any mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors concluded the finding was associated with the design margins aspect (H.6) of the human performance cross-cutting area since the licensee repeatedly failed to install a pressure switch adequate for the operating conditions

Inspection Report# : [2015003](#) (*pdf*)

Significance: G Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Loss of "A" ESW Train

A self-revealing green NCV of 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, Criterion III, Design Control, was identified for failure to implement design control measures that verify adequacy of design. Specifically, EC 83681 involved the installation of a new pump bearing with different wear characteristics but the EC failed to evaluate the impact of the bearing replacement on alignment sensitivity of the pump shaft. The licensee took immediate action to align the Normal Service Water system to provide cooling to the heat loads affected by the loss of the "A" ESW pump.

Failure to incorporate alignment requirements for the pump shaft in the work instructions associated with EC 83681

was a performance deficiency. The performance deficiency was related to the equipment performance attribute of the initiating events cornerstone. The performance deficiency was determined to be more than minor because the performance deficiency adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure of the ESW pump shaft resulted in a loss of service water which ultimately led to the loss of the 'A' train of shutdown cooling for a period of twelve minutes. Inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 4 and Appendix G (June 19, 2012), "Shutdown Operations Significance Determination Process." The inspectors determined the finding was associated with the Initiating Event cornerstone and required a detailed risk evaluation because the finding involved a loss of safety function. A detailed risk evaluation was completed by a regional Senior Reactor Analyst (SRA). The regional SRA performed a detailed risk review of the finding. The SRA performed the analysis by increasing the maintenance unavailability for the pump, and evaluating it versus the base case. This method was chosen because the pump was in standby service, and the dominant method of determining there was a failure would have been during testing, or operation under non accident conditions. The additional time for the unnecessary repair was used to adjust the base case maintenance unavailability. Online and shutdown risk were evaluated. The total impact was determined to be low enough for the finding to be GREEN for SDP purposes. The finding had a cross-cutting aspect in the Human Performance area of Design Margin (H.6).
Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to implement EQ Program Requirements

The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, for the licensee's failure to identify and correct a condition adverse to quality affecting the Environmental Qualification (EQ) Program. Specifically, the licensee failed to enter into the CAP the results of the vendor audit of the EQ program which resulted in the licensee blocking open D10 and D11 on June 16, 2015 while the unit was at 100 percent power. The resident inspectors questioned the main control room (MCR) about the doors being open and the licensee immediately closed D10 and D11. The licensee has entered the violation into their CAP as AR 754721, implemented interim guidance as an operation's standing instruction (2015-024) not to open D10 or D11 while in mode 1-4.

The opening of the tornado door between the main steam tunnel (MST) and the reactor auxiliary building (RAB) was a performance deficiency. The finding was screened in accordance with NRC IMC 0609.04, Initial Characterization of Findings, dated July 7, 2012. The finding was determined to affect the Initiating Events Cornerstone as the MST to RAB tornado door represented a barrier which left RAB systems and components vulnerable to harsh environment conditions should a high energy line break (HELB) occur during the time the doors were open. SDP screening determined that the finding could have affected equipment used to mitigate a LOCA, could have caused a reactor trip, could have resulted in internal flooding conditions, and could have affected equipment relied upon to transition the plant to a stable shutdown condition and required a detailed risk evaluation. A detailed risk evaluation was performed by a regional SRA in accordance with NRC IMC 0609 Appendix A. The major analysis assumptions included: a twenty hour exposure interval, HELBs postulated in all steam and feedwater piping in the MST, pipe break frequency from EPRI Report 1021086, no recovery credit for door closure, and a bounding CCDP value utilized. The CCDP was estimated using the NRC Shearon Harris SPAR model assuming a reactor trip initiator and bounding assumptions that the postulated RAB harsh environmental and flooding conditions would cause failure of the following equipment: auxiliary feedwater system, alternate seal injection system, RAB essential services chillers, component cooling water pumps, charging and safety injection pumps, and the residual heat removal pumps. The dominant sequence was a reactor trip, success of the reactor protection system, and failure of the reactor coolant pump (RCP) seals leading to an unmitigated RCP seal LOCA. The risk was mitigated by the short exposure period and the probability of steam and feedwater HELBs. The analysis determined that the finding represented an increase in core damage frequency of $< 1.0 \text{ E-6/year}$, a GREEN finding of very low safety significance. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution in the Corrective Action component because the licensee did not take

appropriate corrective actions to address safety issues in a timely manner. [P.3]

Inspection Report# : [2015003](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: FIN Finding

NRC Biennial Written Examinations Did Not Meet Qualitative Standards

. The inspectors identified a finding of very low safety significance associated with 10 CFR 55.59, "Requalification," based on a determination that greater than 20 percent of the written examination questions administered to licensed operators during the 2014 biennial written examination were flawed. The licensee entered this issue into their Corrective Action Program (CAP) as Action Request (AR) 01940942, Inspection Procedure (IP) 71111.11B NRC Biennial LOCT Inspection Feedback, dated August 6, 2015.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute 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. Specifically, the finding adversely affected the quality and level of difficulty of biennial written examinations, which potentially impacted the facility's ability to appropriately evaluate licensed operators. The risk importance of this issue was evaluated using IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)."

The qualitative standards used by the inspectors were defined in TPP-306, "Licensed Operator Continuing Training Program," and TRN-NGGC-0441, "Licensed Operator Requalification Annual/Biennial Exam Development," and further described within NUREG-1021, Revision 9, ES-602, Attachment 1, "Guidelines for Developing Open-Reference Examinations," and Appendix B, "Written Examination Guidelines." Because more than 20 percent, but less than 40 percent, of the questions reviewed were flawed, Blocks 4 and 5 of Appendix I characterized the finding as having very low safety significance (Green). A review of the cross-cutting aspects was performed and no associated cross-cutting aspect was identified.

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

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

'B' ESW System Safety-Related Cables Submerged in Water

A self-revealing Green non-cited violation (NCV) of Criterion III, Design Control, Appendix B of 10 CFR Part 50, occurred due to the licensee's failure to maintain Class 1E (safety-related) electrical cables in an environment for which they are designed. Specifically, the low-voltage safety-related cables associated with the 'B' Essential Service Water (ESW) system were submerged in water, a condition for which they are not qualified. The licensee took immediate actions to lower the water levels in underground cable vaults where submerged cables were discovered, and conduct pump-downs of the safety-related underground cable vaults on an increased scheduled frequency. The licensee entered this issue into the corrective action program (CAP) as nuclear condition reports (NCRs) 1961933 and 1962664, respectively, and implemented actions to pump down the non-conforming vaults.

The licensee's failure to maintain the low-voltage safety-related cables associated with the 'B' ESW system in an environment for which they were designed was a performance deficiency. The performance deficiency was more than minor because the cables known to be submerged are part of the 'B' ESW system, which is a mitigating system and is associated with the Mitigating Systems Cornerstone. The performance deficiency was related to the equipment reliability attribute and failure to maintain the cables in the environment for which they were designed adversely impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the submergence of the safety-related cables adversely impacted the service life of the cables and could cause the 'B' ESW system to be inoperable in the event a cable failed as a result of continuous submergence. The inspectors used Table 2 of Attachment 4, Initial Characterization of Findings, of Inspection Manual Chapter (IMC) 0609, Significance Determination Process (SDP), to determine that the finding was associated with the Mitigating Systems Cornerstone. Using the guidance provided in Table 3 of Attachment 4, the inspectors transitioned to Appendix A, SDP for Findings At-Power, of IMC 0609. The inspectors used Exhibit 2, Mitigating Systems Screening Questions, of the appendix, to determine that the finding was of very low safety significance (Green) because the finding did not represent an actual loss of function on the ESW system. The finding was assigned the cross-cutting aspect of work management, as described in the area of human performance, because the licensee failed to implement an adequate preventive maintenance program to monitor and maintain the sump pumping system associated with the safety-related cable vaults (H.5).

Inspection Report# : [2015004](#) (pdf)

Significance: G Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Implement Post-Maintenance Testing

A self-revealing Green NCV of Criterion XI, Test Control, Appendix B of 10 CFR Part 50, occurred due to the licensee's failure to perform adequate post-maintenance testing on the essential services chilled water (ESCW) chillers. Specifically, on multiple occasions the licensee failed to perform section 7.8, Current Signal Input Resistor Adjustment, of procedure CM-I0014, York Essential Services Chilled Water Chiller Temperature Control Maintenance, following maintenance on the temperature controller associated with the ESCW chillers. The licensee took corrective actions to adjust the current limiters on the ESCW chillers to be at the correct setting of 65 amps. The licensee entered this issue into the CAP as NCRs 1944657 and 1950574.

The licensee's failure to perform adequate post-maintenance testing on the, ESCW Chiller was a performance deficiency. Specifically, the failure to perform section 7.8 of procedure CM-I0014 to ensure the configuration of the temperature controllers were per design specifications resulted in the current limiters on each unit being out of calibration for extended periods of time. The performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. For the 'A' train, continued omission of section 7.8 following maintenance on its temperature controller, had the potential of the pre-rotation vanes pulling excessive load resulting in a trip of the 'A' train chiller. For the 'B' train, continued omission of section 7.8 following maintenance on its temperature controller had the potential of the pre-rotation vanes not picking up adequate load to meet the cooling demands during accident conditions. The inspectors used Table 2 of Attachment 4, Initial Characterization of Findings, of IMC 0609, Significance Determination Process, to determine that the finding was associated with the Mitigating Systems Cornerstone. Using the guidance provided in Table 3 of Attachment 4, the inspectors transitioned to Appendix A, Significance Determination Process (SDP) for Findings At-Power, of IMC 0609. Using Exhibit 2, Mitigating Systems Screening Questions, of the appendix, the inspectors determined that the finding was of very low safety significance (Green) because while the chillers were in a nonconforming condition, operability of the chillers was maintained. The finding was assigned the cross-cutting aspect of bases for decisions, as described in the area of human performance, because the licensee made the decision not to perform section 7.8 of maintenance procedure CM-I0014 without documenting a reason for omitting the section following maintenance on the ESCW temperature controllers (H.10).

Inspection Report# : [2015004](#) (pdf)

Significance:  Dec 10, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish As-found Testing on 6.9kV Vacuum Breakers

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” for the licensee’s failure to establish a periodic as-found testing program of safety-related 6.9kV vacuum breakers in accordance with applicable design document IEEE 308-1971. The licensee entered this issue into their corrective action program as action request 01983086 and initiated a procedure change request to have the procedure changed to verify the as-found capability of the breakers before performing the first scheduled preventative maintenance on the breakers in April 2016.

The performance deficiency 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 establish as-found testing could mask degradation of the circuit breakers and decrease the reliability of the breakers to perform their safety-related function when called upon. The finding was determined to be of very low safety significance (Green), because it was a deficiency affecting the design or qualification of a structure, system, or component, which maintained its operability. The team determined that no finding cross-cutting aspect was applicable because the finding did not reflect current licensee performance.

Inspection Report# : [2015007](#) (pdf)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Adequately Implement the Clearance and Tagging Procedure

A self-revealing Green NCV of Technical Specification (TS) 6.8.1, Procedures and Programs, for the licensee’s inadequate implementation of procedure AD-OP-ALL-0200, Clearance and Tagging, when the licensee failed to establish an appropriate clearance boundary to support filling the cooling tower basin. This resulted in excess of 45,000 gallons of water being spilled in the RAB. The licensee initiated corrective actions to address potential equipment degradation and personnel hazards as a result of the spill.

The licensee’s failure to adequately implement procedure, AD-OP-ALL-0200, Clearance and Tagging, Section 5.5, Step 1 was a performance deficiency. Specifically, CO 310942 did not establish isolation between the cooling tower basin and ISW-276, which was not completely assembled. The performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, if operator action had not stopped the leakage, it potentially would have challenged the operability of safety related equipment on multiple levels of the RAB. Using MC 0609, SDP, Appendix G, Exhibit 3 – Mitigating Systems Screening Questions, the finding is a deficiency affecting the qualification of a mitigating SSC, however, the SSC function was restored with operator action, resulting in a GREEN finding of very low safety significance. The finding had a crosscutting aspect of procedure adherence, as described in the area of human performance because the licensee allowed the CO to be lifted in the plant without properly establishing an isolation boundary and isolating the cooling tower basin from ISW-276 while not fully assembled. (H.8).

Inspection Report# : [2015003](#) (pdf)

Barrier Integrity

Emergency Preparedness

Significance:  Oct 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow EPM-410 Procedure

An NRC-identified Green NCV of 10 CFR 50.54(q)(2) was identified, for the licensee's failure to follow and maintain, in effect, the Emergency Plan when performing monthly testing of the Technical Support Center (TSC). Specifically, the licensee failed to follow procedural steps when recorded values did not meet acceptance criteria as specified in EPM-410, Communication and Facility Performance Tests. The issue was placed in the licensee's corrective action program as CR's 01942073, 01940053.

The finding was more than minor because it was associated with the Emergency Response Organization (ERO) Performance attribute and it adversely affected the Emergency Preparedness Cornerstone objective of ensuring that the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the failure to follow procedural steps when recorded values did not meet acceptance criteria resulted in a failure to comply with emergency plan. The finding was assessed for significance in accordance with NRC Manual Chapter 0609, Appendix B Emergency Preparedness Significance Determination Process. Attachment 2 of Appendix B, Failure to Comply Significance Logic is as follows: Failure to comply; Loss of Risk Significant Planning Standard Function (RSPS), NO; RSPS Degraded Function, NO; Loss of Planning Standard Function, No; results in a Green finding. The inspectors identified a cross-cutting aspect in the Problem Identification and Resolution area because the licensee did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance (P.3).

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

Significance: N/A Oct 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Untimely 10 CFR 50.73 Notification of an Inoperable CIV

An NRC-identified Severity Level IV violation of 10 CFR 50.73 was identified for the licensee's failure to provide a written report to the NRC within 60 days after discovery of a condition prohibited by Technical Specification (TS) Limited Condition for Operation (LCO) 3.6.3, "Containment Isolation Valves." The issue was placed in the licensee's corrective action program as CR 01958628.

The inspectors determined that the failure to provide a written report to the NRC within the time limits specified in regulations was a violation 10 CFR 50.73. The violation was evaluated using Section 6.9 of the NRC Enforcement Policy, because the failure to submit a required licensee event report may impact the ability of the NRC to perform its regulatory oversight function. As a result, this violation was evaluated using traditional enforcement. In accordance with Section 6.9.d.9 of the NRC Enforcement Policy, this violation was determined to be a Severity Level IV, non-cited violation. The inspectors determined that a cross-cutting aspect was not applicable because the issue involving untimely reports to the NRC was strictly associated with a traditional enforcement violation.

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

Significance: N/A Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Report the Loss of Emergency Assessment Capability

The inspectors identified a severity level (SL) IV NCV of 10 CFR 50.72(b)(3)(xiii) for the failure to report to the NRC within 8 hours the major loss of emergency assessment capability of the Technical Support Center (TSC). Specifically, on multiple occasions between January 2015 and July 2015, there were unplanned losses of emergency response facility (ERF) function, which resulted in the loss of emergency assessment capability, which the licensee failed to report the condition within the 8-hour time requirement. Subsequently, the licensee notified the NRC once it was realized a report was required and entered the issue in the CAP as AR 757885.

The failure to report the loss of emergency assessment capability in the TSC as required by 10 CFR Part 50.72(b)(3) (xiii) was a performance deficiency. The licensee's failure to notify the NRC was determined to impact the regulatory process, which requires evaluation through the traditional enforcement process. Based on the examples provided in Section 6.9 of the Enforcement Policy, dated February 4, 2015, Inaccurate and Incomplete Information or Failure to Make a Required Report, the performance deficiency was determined to be a SL IV violation. Specifically, example d.9 states that a SL IV violation involves a failure to make a report required by 10 CFR 50.72 or 10 CFR 50.73.

Because the violation was processed as a traditional enforcement violation, no cross-cutting aspect is assigned

Inspection Report# : [2015003](#) (*pdf*)

Last modified : August 29, 2016