

Harris 1

4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2014

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Implement a Plant Modification

The inspectors identified a finding of very low safety significance (Green) when the licensee did not adequately implement the procedural requirements of ADM-NGGC-0106, "Configuration Management Program Implementation," during the installation of a temporary modification to install temporary air compressors on May 31, 2014. The licensee entered the issue into their Corrective Action Program (CAP) as Action Request (AR) #690371 and revised procedure OP-151.01 several times to address the procedural issues.

The inspectors determined that the failure to adequately implement ADM-NGGC-106 was a performance deficiency. This performance deficiency was determined to be more than minor in accordance with IMC 0612, Appendix B, because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, ADM-NGGC-0106, Section 9.2.39A, was not adequately implemented which resulted in OP-151.01, Attachment 7 being inadequate to implement a temporary modification for the use of three temporary air compressors supplying plant air to equipment and components which can cause plant transients. Using IMC 0609, Significance Determination Process, Appendix A, Exhibit 1- Initiating Events Screening Questions, the inspectors determined this finding to be of very low safety significance (Green) because the finding did not involve the complete or partial loss of a support system that contributes to the likelihood of, or cause an initiating event and affected mitigation equipment. The finding had a cross-cutting aspect of Consistent Process, as described in the Human Performance cross-cutting area because the licensee failed to comply with ADM-NGGC-106 and correct the inadequate operating procedure (H.13).

Inspection Report# : [2014003](#) (*pdf*)

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to prevent recurrence of a significant condition adverse to quality

Green. A self-revealing Green finding was identified for the failure to implement an adequate corrective action to prevent recurrence (CAPR) for a Significant Condition Adverse to Quality (SCAQ) as required by licensee procedure CAP-NGGC-0205, Condition Evaluation and Corrective Action Process, resulting in the failure of the 1D2 transformer on January 18, 2014. Specifically, after the 1E2 transformer failed on August 8, 2013, the licensee determined the event to be a SCAQ, but failed to implement an adequate CAPR to prevent the failure of the 1D2 transformer. The licensee entered this issue into the corrective action program (CAP) as Action Request (AR) #663324. As corrective action, the licensee is replacing the 1D2 transformer and other similar transformers and implemented additional testing to aid in the identification of degradation prior to transformer failure.

The inspectors determined that the failure to implement an adequate CAPR for a SCAQ was a performance deficiency. This finding was more than minor because it was associated with the Initiating Events cornerstone attribute of Equipment Performance, and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. Specifically, a

manual reactor trip resulted from the 1D2 failure. Using IMC 0609, Significance Determination Process, Appendix A, Exhibit 1- Initiating Events Screening Questions, the inspectors determined this finding to be of very low safety significance (Green) because the finding did cause a reactor trip but did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition (e.g., loss of condenser, loss of feedwater). The finding had a cross-cutting aspect of Resolution, as described in the Problem Identification and Resolution cross-cutting area because the licensee did not implement effective corrective actions to address the issue in a timely manner commensurate with their safety significance. Specifically, the licensee's CAPR for the August 8, 2013, event did not resolve the cause for transformer failures. (P.3) (Section 4OA2.2)

Inspection Report# : [2014002](#) (pdf)

Mitigating Systems

Significance: G Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Implement the Equipment Clearance Procedure

The NRC identified a Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1, Procedures and Programs, for the licensee's inadequate implementation of procedure OPS-NGGC-1301, Equipment Clearance, when they failed to identify required compensatory measures for a clearance to support installation of a plant modification. This resulted in an unanalyzed condition with no compensatory measures for internal flooding. The licensee entered this into the corrective action program (CAP) as Action Request (AR) #696331 and AR #726784 and took immediate corrective actions to restore the sump pumps to their design configuration.

The licensee's failure to adequately implement Procedure, OPS-NGGC-1301, Equipment Clearance, Section 9.8, step 3 was a performance deficiency. Specifically, if an internal flood had occurred in the Diesel Fuel Oil Storage Tank (DFOST) building during this period, it could have resulted in both trains of the safety-related fuel oil transfer pumps being inoperable. The performance deficiency was more than minor because it is associated with the Human Performance Attribute of the Mitigating Systems 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). Using Manual Chapter 0609, Significance Determination Process, Appendix A, Exhibit 2 – Mitigating Systems Screening Question, Section B, and Exhibit 4, the finding was determined to require a detailed risk evaluation because the loss of this equipment during an internal flooding initiating event would degrade two or more trains of a multi-train system that supports a risk significant system or function. A detailed risk evaluation was performed by a regional senior risk analyst in accordance with the guidance of NRC IMC 0609 Appendix A, using the Shearon Harris Standardized Plant Analysis Risk (SPAR) model. The major analysis assumptions included: A 28-hour exposure period, the finding was modelled as a non-recoverable common cause failure to run of the Emergency Diesel Generators (EDG), pipe failures of fire protection piping was assumed to result in EDG inoperability and pipe failure data was taken from Electric Power Research Institute (EPRI) Pipe Failure Frequencies for Internal Flooding PRAs, Revision 1. The dominant sequence was a station blackout with auxiliary feedwater system failure and no recovery of the EDGs or offsite power leading to loss of core heat removal and core damage. The risk was mitigated by the short exposure period and the low probability of pipe ruptures resulting in EDG inoperability. The analysis determined that the finding led to an increase of core damage frequency of <math><1E-6</math>/year, a Green finding of very low safety significance. The finding had a cross-cutting aspect of Challenge the Unknown, as described in the area of Human Performance because the licensee allowed the clearance order (CO) to be hung in the plant without properly evaluating and managing the associated risk through the use of compensatory measures (H.11).

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

Significance:  Jul 25, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Test That Verified Interlock Capability

The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to establish a test program to assure that the interlocks between the Charging/Safety Injection (CSI) pump alternate miniflow block valves (1CS-745, -753) and the Residual Heat Removal (RHR) to CSI pump "piggyback" valves (1RH-25, -63) would perform satisfactorily in service. In response to this issue, the licensee initiated nuclear condition report 698720 and performed circuit testing of these control system interlocks during the inspection period to verify they remained operable. The licensee also verified that these interlocks had been subject to preoperational testing.

The licensee's failure to establish a test program to assure that the interlocks between the CSI pump alternate miniflow block valves (1CS-745, 1CS-753) and the RHR to CSI pump "piggyback" valves (1RH-25, 1RH-63) would perform satisfactorily in service, as required by 10 CFR Part 50, Appendix B, Criterion XI, was a performance deficiency. The performance deficiency was determined to be more than minor because, it was associated with the mitigating systems 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. Specifically, the lack of testing affected the objective because there was no method to determine the capability of the interlocks to perform their function in the event of a postulated single failure during an accident, which could affect the high head safety injection function. The team 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. The team determined that no cross-cutting aspect was applicable because the finding was not indicative of current licensee performance.

Inspection Report# : [2014007](#) (pdf)

Significance:  Jul 25, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Appropriate Procedural Limitations Based on Design Requirements of the Emergency Diesel Generators

The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assure that applicable regulatory requirements in technical specification surveillance requirement 4.8.1.1.2.e. were correctly translated into procedural guidance. Specifically, appropriate jacket water (JW) and lube oil (LO) standby temperature limitations, which ensured emergency diesel generator (EDG) capability to meet TS SR 4.8.1.1.2.e. requirements, were not translated into procedures for determining EDG operability. Following identification by the team, the licensee generated nuclear condition report 698245 and established administrative limits to ensure the EDG JW and LO temperatures were not allowed to drop below technically supportable limits.

The licensee's failure to assure that applicable regulatory requirements in technical

specification surveillance requirement SR 4.8.1.1.2.e. were correctly translated into procedural guidance, as required by 10 CFR Part 50, Appendix B, Criterion III, was a performance deficiency. The performance deficiency was determined to be more than minor because, it was associated with the mitigating systems cornerstone attribute of equipment performance 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 did not ensure the capability and reliability of the EDGs to respond to a design basis accident at the JW or LO temperature conditions at which they considered the EDGs operable. The team 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. The team determined that no cross-cutting aspect was applicable because the finding was not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

Significance:  Jul 25, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Appropriate Procedural Limitations to Prevent Exceeding TS Limits and Safety Analysis Assumptions

The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to assure that applicable regulatory requirements in technical specification (TS) 3.7.1.1 and design basis inputs in accident analyses were translated into procedural guidance. Specifically, the licensee did not follow their inservice test program guidance to account for surveillance test equipment instrument uncertainty when establishing the acceptability of Main Steam Safety Valve lift setpoints required by TS 3.7.1.1. Following identification by the team, the licensee generated nuclear condition report 697100 and performed an evaluation of the remaining available margin to the overpressure limit in the safety analysis, and discovered that, after potential instrument uncertainty was taken into account, the margin remained positive, but was reduced from approximately 19 psig to approximately 6 psig.

The licensee’s failure to assure that applicable regulatory requirements in TS 3.7.1.1 and design basis assumptions in accident analyses were correctly translated into procedural guidance, as required by 10 CFR Part 50, Appendix B, Criterion III, was a performance deficiency. 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, by not accounting for the measurement and test equipment uncertainties as required by the inservice test program, it could have led to the actual lift setpoints exceeding the inputs used in the design basis safety analyses. The team 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. The team determined that no cross-cutting aspect was applicable because the finding was not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

Significance:  May 09, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Evaluate All Targets Within the Zone of Influence of Ignition Sources

An NRC-identified non-cited violation of 10 CFR 50.48 (c) and National Fire Protection Association Standard (NFPA) 805 Section 2.4.3.2 was identified for the licensee's failure to address in the Fire Probabilistic Risk Assessment (Fire PRA) the risk contribution associated with all potentially risk significant fire scenarios for a given fire compartment/fire area. The licensee did not identify and evaluate all targets that were within the zone of influence (ZOI) of ignition sources for selected fire scenarios which could potentially contribute to the risk for the fire scenarios. The licensee entered the issue in the corrective action program as Nuclear Condition Reports 682633 and 685355 and established an hourly roving fire watch as compensatory measures.

The licensee's failure to comply with the requirements of 10 CFR 50.48(c) and NFPA 805 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute of protection against external factors (i.e., fire) 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. The missed targets in the ZOI for the selected fire scenarios had the potential to impact the ability to achieve safe and stable conditions. The finding was screened in accordance with NRC IMC 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," review was required as the finding affected post-fire SSD. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the finding was screened as Green in step 1.6.1 "Screen by Licensee PRA-Based Safety Evaluation." An SDP Phase 3 analysis was performed to document the review of the risk determination of the missed ignition source-target interactions using the licensee's Fire PRA model. A senior reactor analyst performed the Phase 3 SDP analysis in accordance with the guidance in IMC 0609 Appendix F and NUREG/CR-6850 Revisions 0 and 1. The evaluation determined that the missed ignition source-target interactions resulted in a CDF increase of $5.91E-8$ /year, a Green finding of very low safety significance. There was no cross cutting aspect assigned to this finding because it was not indicative of current licensee performance since the original ignition source and target walkdowns were performed in 2006 and 2007.

Inspection Report# : [2014008](#) (*pdf*)

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to adequately perform the new fuel oil surveillance requirement

Green. The inspectors identified a Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.a, Procedures and Programs, for the licensee's failure to have an adequate surveillance test to implement the requirements of SR 4.8.1.1.2.c, as required by Regulatory Guide (RG) 1.33, Quality Assurance Program Requirements, Appendix A, Section 8.b. Specifically, licensee procedure RST-209, Technical Specification Surveillance of New Diesel Fuel Oil (DFO), did not adequately ensure a representative sample of the DFO to confirm the required properties prior to addition to the "B" diesel fuel oil storage tank (DFOST). This created the potential for DFO of an unacceptable quality to be introduced to the "B" emergency diesel generator (EDG) on December 4, and 6, 2013. The licensee took corrective action by testing the fuel oil in the "A" and "B" DFOSTs and EDG day tanks to verify that the DFO met the required properties as outlined in TS. Additionally, the licensee planned to revise RST-209 and established interim actions to prevent adding new fuel oil prior to obtaining a representative sample.

The inspectors determined that the failure to have an adequate surveillance test to implement the requirements of SR 4.8.1.1.2.c. on December 4, and 6, 2013 was a performance deficiency. Specifically, this created the potential for fuel oil of an unacceptable quality to be introduced to the "B" EDG. This finding was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern in that it could have affected operability of the EDGs. Using IMC 0609, Significance Determination Process, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined this finding to be of very low safety significance

(Green) because the finding is not a deficiency affecting the design or qualification and does not represent an actual loss of system and/or function. The finding had a cross-cutting aspect of Resources, as described in the Human Performance cross-cutting area because the licensee failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. Specifically, procedure RST-209 Revision 23 inappropriately permitted the use of data from a sample that was 20 months old to meet SR 4.8.1.1.2.c. (H.1) (Section 1R22)

Inspection Report# : [2014002](#) (*pdf*)

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to comply with Technical Specification 3.11.5.2

Green. The inspectors identified a Green NCV of TS 3.11.2.5, Explosive Gas Mixture, for the failure to implement the actions of the limiting condition for operation (LCO). Specifically, during shutdown plant operations in November 2013, the licensee identified oxygen concentrations in the gaseous radwaste treatment system (GRTS) of greater than two percent oxygen, with hydrogen concentration greater than four percent and did not enter nor take the actions of TS LCO 3.11.2.5. The licensee entered the issue into their CAP as AR #651188 and reduced the oxygen concentration to less than two percent on December 11, 2013.

The licensee's failure to enter and implement the actions of TS LCO 3.11.2.5, once oxygen concentrations exceeded two percent, with hydrogen concentrations greater than four percent within the GRTS was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, Appendix B, because if left uncorrected, it would have the potential to lead to a more significant safety concern such as an explosive gas mixture. Specifically, on November 11, 2013, SR 4.11.2.5 was performed unsatisfactorily; Operations was unaware of the results and did not implement the actions of TS LCO 11.2.5. Using IMC 0609, SDP, Appendix A, Exhibit 2-External Event Mitigation Systems Screening Questions, the inspectors determined this finding to be of very low safety significance (Green) because it was a deficiency that did not result in a degradation or loss of system function. The finding had a cross-cutting aspect of Procedure Adherence, as described in the Human Performance cross-cutting area because the licensee failed to comply with RST-202, Hydrogen and Oxygen Surveillance of the GRTS, and notify Operations of the unsatisfactory test result. (H.8) (Section 4OA2.3)

Inspection Report# : [2014002](#) (*pdf*)

Barrier Integrity

Significance:  Jul 25, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Categorization of Valves in Potential Release Paths During Accidents

The team identified a Green non-cited violation of 10 CFR Part 50.55a, "Codes and Standards," for the licensee's failure to categorize valves that were subject to a specific maximum leakage amount while in the closed position as Category A, as required by their American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code of record. Specifically, the team determined that the licensee failed to correctly categorize six valves that could allow emergency core cooling system (ECCS) leakage into the

refueling water storage tank above the water level during ECCS post-accident recirculation operation. During the inspection period, the licensee generated nuclear condition report 699708, and performed an evaluation of the affected valves that verified the valves' ability to meet leakage limits based on other monitoring that was in place.

The licensee's failure to categorize valves that were subject to a specific maximum leakage amount while in the closed position as Category A, as required by their ASME OM Code of record, was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the SSC and barrier performance attribute of the Barrier Integrity cornerstone and adversely 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 reliability of the physical design barrier of the leak-tightness of valves in the release paths was not assured since leak testing was not performed due to inaccurate categorization. The team determined the finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment and did not involve an actual reduction in function of the hydrogen igniters in reactor containment. The team determined that no cross-cutting aspect was applicable because the finding was not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

Emergency Preparedness

Significance:  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Loss of Emergency Planning Sirens

The NRC identified a Green NCV associated with emergency preparedness planning standard 10 CFR 50.47(b)(5), which requires in part, that the means to provide alert and notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone (EPZ) have been established. Specifically, on April 3, 2014, the licensee unintentionally initiated a complete loss of sirens while responding to a siren system alarm. The licensee entered this issue into the corrective action program (CAP) as Action Request (AR) #679984. As corrective action, the licensee replaced a failed circuit card and restored functionality of the siren system.

The licensee's failure to comply with WCP-NGGC-0300, Work Request Initiation, Screening, Prioritization and Classification, was a performance deficiency. Specifically, this failure combined with the circuit card failure caused a complete loss of siren functionality for approximately two hours. This finding was more than minor because if left uncorrected, loss of Alert Notification System function has the potential to lead to a more significant safety concern and is associated with the emergency preparedness cornerstone attribute of Facilities and Equipment (Availability of ANS). This ANS unavailability affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Using Manual Chapter 0609 Appendix B, Emergency Preparedness Significance Determination Process (Section 5.5) – Failure to Comply with 10 CFR 50.47(b)(5), the inspectors determined this finding to be of very low safety significance (Green) because the loss of siren function was of short duration and did not reach the “Degraded RSPS” threshold. The finding had a cross-cutting aspect of Procedure Adherence, as described in the Human Performance cross-cutting area because the EPTs failed to comply with the procedural guidance of WCP-NGGC-0300 (H.8).

Inspection Report# : [2014004](#) (*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 : February 26, 2015