

Harris 1

2Q/2012 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Jun 30, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Preventive Maintenance Results in Inoperability of the “A” Emergency Service Water System

A self-revealing Green NCV of Technical Specification (TS) 6.8.1, Procedures, was identified for the licensee’s failure to implement an adequate preventive maintenance procedure to identify a condition which led to the inoperability of the “A” Emergency Service Water (ESW) system. Specifically, the licensee failed to perform an adequate inspection of the grease in the lower gear box of the “A” ESW strainer motor, resulting in the strainer failing to function and the inoperability of the “A” ESW system. The licensee entered this issue into their CAP as AR #521946. As corrective action, the licensee revised PM-M0014 to include inspection of all similar gear boxes throughout the plant.

The failure to implement an adequate preventive maintenance procedure to identify a condition which led to inoperability of the “A” ESW system was a performance deficiency. The performance deficiency was more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone, and it 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, it resulted in the unplanned inoperability of the “A” ESW train. Using IMC 0609, “Significance Determination Process,” Phase 1 screening worksheet of the SDP, this finding was determined to be of very low safety significance because it was not a design or qualification deficiency confirmed to result in a loss of operability or functionality, did not represent a loss of system safety function, did not result in a loss of safety system function for a single train for greater than TS allowed outage time, did not result in a loss of safety function of one or more non-TS trains of equipment designated as risk significant for greater than 24 hours, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Due to the historic nature of the development of this preventive maintenance procedure and the fact that this procedure was not performed on either train of ESW within the past two years, this finding has no cross-cutting aspect.

Inspection Report# : [2012003](#) (*pdf*)

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure AOP-036.04 for Fire Area 1-A-BAL-C Post-Fire Safe Shutdown

•Green. The team identified a non-cited violation of Harris Nuclear Plant Technical Specification 6.8.1.a. for inadequate guidance in fire response abnormal operating procedure AOP-036.04. Specifically, the procedure could not have been performed as written in that, AOP-036.04, Section 3.1, directed operators to implement a step in the procedure that did not exist. The licensee initiated nuclear condition report 489092 to address this issue in the corrective action program.

The team determined that inadequate fire response procedure guidance was a performance deficiency. This finding was more than minor because it was associated with the procedure quality attribute of the mitigating systems cornerstone and it affected the cornerstone objective of protection against external events (i.e., fire). The team

assessed this finding using IMC 0609, Appendix F, Fire Protection Significance Determination Process. The team assigned a low degradation rating to this finding because the abnormal operating procedure deficiencies were compensated by available emergency operating procedure guidance, operator experience/familiarity, and training. It was likely that plant operators would have been able to assess plant parameters and would have taken the appropriate actions required to ensure post-fire safe and stable plant conditions. Therefore, this finding was of very low safety significance (Green). The cause of this finding was determined to have a cross-cutting aspect in the Human Performance Area, Resources Component, because the licensee's validation and verification process did not ensure that the procedure was adequate and accurate. (H.2 (c)). (Section 1R05.01.b)

Inspection Report# : [2011011](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadvertent Actuation of Turbine Driven Auxiliary Feedwater Pump Caused by Inadequate Procedure

A self-revealing Green NCV of Technical Specifications (TS) 6.8.1, Procedures, was identified for the licensee's failure to develop an adequate post maintenance test (PMT) procedure for the replacement of a defective 6.9kV undervoltage relay (UVTXSB/1732). Specifically, the licensee failed to ensure that the PMT procedure CM-E0032 (UVTXSB/1732 relay replacement) established adequate steam isolation to the turbine driven auxiliary feedwater (TDAFW) pump and prevent an inadvertent actuation. This resulted in the TDAFW pump inadvertently starting and injecting water into the steam generators which caused an increase in reactor power to 100.2 percent for approximately one minute. As corrective actions, the licensee secured the TDAFW pump, restored reactor power to 100 percent, and replaced the failed relay. In order to return the TDAFW pump to operable, the licensee performed a surveillance test to meet the requirements of the PMT. The applicable procedures were placed on administrative hold for evaluation and revision. Additionally, an investigation was performed to determine further corrective actions. The issue was placed into the CAP as AR #472616.

The licensee's failure to develop an adequate PMT procedure CM-E0032 (UVTXSB/1732 relay replacement) to ensure adequate steam isolation to the TDAFW pump and prevent an inadvertent actuation was a performance deficiency. The performance deficiency was more than minor because it is associated with the human performance attribute of the Mitigating System cornerstone, and it 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, it resulted in the automatic start of the TDAFW pump, water flowing to the steam generators, and a resultant increase in reactor power to 100.2 percent. Using IMC 0609, Significance Determination Process, Phase 1 screening worksheet, this finding was determined to be very low safety significance because it was not a design or qualification deficiency confirmed to result in a loss of operability or functionality, did not represent a loss of system safety function, did not result in a loss of safety system function for a single train for greater than TS allowed outage time, did not result in a loss of safety function of one or more non-TS trains of equipment designated as risk significant for greater than 24 hours, and did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect of Human Error Prevention, as described in the Work Practices component of the Human Performance cross-cutting area, because the licensee did not apply sufficient human error prevention measures during the development and implementation of the PMT procedure (CM-E0032), to establish adequate steam isolation and prevent an inadvertent TDAFW pump actuation (H.4(a)).

Inspection Report# : [2011004](#) (pdf)

Significance:  Jul 29, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Adequate Corrective Action to Preclude Repetition of a Significant Condition Adverse to Quality Associated with the Quality Control Organization's Acceptance of Electrical Terminati

Green: An NRC identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for the licensee's failure to take adequate corrective action to preclude repetition of a significant condition adverse to quality associated with the oversight of the Quality Control (QC) organization at Harris. The

licensee failed to take adequate corrective actions to address the cause of QC's acceptance of electrical termination errors which occurred during Refueling Outage (RFO) - 15 necessary to preclude related errors which occurred in RFO-16. The licensee entered this violation in their corrective action program as Nuclear Condition Report (NCR) 479478.

The inspectors determined that failure of the licensee to take adequate corrective actions to address the cause of QC's acceptance of electrical termination errors which occurred in RFO-15 necessary to preclude related errors which occurred in RFO-16 was a performance deficiency (PD). The PD was determined to be more than minor because if left uncorrected, the PD has the potential to lead to a more significant safety concern. Specifically, failure to adequately correct the cause of QC's acceptance of electrical termination errors could result in unidentified wiring errors in safety related equipment associated with the Mitigating Systems cornerstone. In accordance with IMC 0609, Attachment 4, Table 4a, "Phase 1 – Initial Screening and Characterization of Findings", the finding was determined to be of very low safety significance (Green) because the finding is not a design deficiency, did not result in an actual loss of system or single train function, and was not potentially risk significant due to external events. The inspectors determined that this finding was directly related to the cross-cutting aspect of thoroughness of evaluation within the Corrective Action Program

component of the Problem Identification and Resolution area because the licensee did not thoroughly evaluate the problems leading to QC's acceptance of electrical termination errors which occurred in RFO-15 and develop adequate corrective actions to address the cause, and as a result, corrective actions did not preclude repetition of similar QC errors in RFO-16. (P.1(c))

Inspection Report# : [2011009](#) (pdf)

Barrier Integrity

Significance:  Jun 30, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Fuel Handling Procedure

A self-revealing Green NCV of TS 6.8.1, Procedures, was identified for the licensee's failure to follow procedure, FHP-014, Fuel and Insert Shuffle Sequence, during core offload resulting in inadvertently placing a spent fuel assembly in the wrong location in the spent fuel pool. Specifically, it resulted in spent fuel assembly HW40 being stored in a location for which it had not been analyzed for 22 days, until it was discovered on May 22, 2012. The licensee entered this issue into their CAP as AR #538457. As corrective action, the licensee verified that all other fuel assemblies moved during offload were located in their correct locations and performed a Human Performance Review Board.

The failure to follow procedure FHP-014 during core offload resulting in inadvertently placing a spent fuel assembly in the wrong location in the spent fuel pool was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, it resulted in spent fuel assembly HW40 being stored in a location for which it had not been analyzed for 22 days. IMC 0609, "Significance Determination Process," Phase 1 screening worksheet of the SDP, instructed the inspector to process this finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." Checklist 4 from IMC 0609, Appendix G, Attachment 1 was determined to be the most appropriate because the water level was greater than 23 feet and the time to boil was greater than two hours in the Spent Fuel Pool. Using Checklist 4, the inspector determined that the finding did not require a quantitative assessment because the licensee met the Technical Specifications for the spent fuel pool, specifically water level and boron concentration. Therefore, this finding was determined to be of very low safety significance (Green). The finding has a cross-cutting aspect of Human Error Prevention, as described in the Work Practices component of the Human Performance cross-cutting area because the designated human error prevention technique of concurrent verification failed to prevent this error (H.4 (a)).

Inspection Report# : [2012003](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct the Reactor Auxiliary Building Emergency Exhaust System Dampers Failure to Close.

The inspectors identified a Green Non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, for the licensee's failure to correct a condition adverse to quality affecting the Reactor Auxiliary Building Emergency Exhaust System (RABEES). Specifically, the licensee failed to resolve the effects of the degraded condition of dampers that failed to close which resulted in RABEES being declared inoperable. The licensee experienced failures in RABEES dampers in 2009, and did not take adequate corrective actions to correct the condition adverse to quality. The licensee entered the violation into their Corrective Action Program (CAP) as Action Request (AR) #513163 and plans to change the springs in the actuators and to reevaluate the long term strategy for the dampers. The failure of the licensee to take adequate corrective actions to address the cause of the RABEES dampers failing to close was a performance deficiency (PD). The PD was more than minor because it affected the Barrier Performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, damper AVD52SB failed to close which led RABEES to be inoperable. The failure of the damper did not result in the loss of functionality of the RABEES system, however the licensee entered the Limiting Condition for Operation and declared RABEES inoperable. Using Manual Chapter 0609.04, Phase 1 Initial Screening and Characterization of Findings, the issue was determined to have very low safety significance (Green), because the finding only represents a degradation of the radiological barrier function provided for the auxiliary building. This finding has a crosscutting 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.

Inspection Report# : [2012002](#) (pdf)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Periodically Calibrate Radiation Monitors

The inspectors identified a Green Non-cited Violation (NCV) of 10 CFR 20.1501 for the failure to periodically calibrate radiation monitoring equipment. Specifically, in 2004 the licensee eliminated periodic calibrations for 64 radiation monitors used to evaluate the magnitude of radiation levels and quantities of radioactive material. The licensee entered the issue into their corrective action program as Action Request (AR) #477569. Planned corrective actions include re-assignment of all radiation monitors to a periodic calibration frequency and a design change to eliminate radiation monitors that are redundant or infrequently used.

The inspectors determined that classifying radiation monitors as 'run-to-failure' and thereby eliminating periodic calibrations was a performance deficiency. This finding was greater than minor because it adversely impacted the cornerstone objective to ensure the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Although operational occurrences such as low sample line flow, loss of counts, detector high voltage, or loss of communication alarms could lead to identification of significant monitor problems, the failure to perform periodic calibrations and response checks could impair the licensee's ability to reliably quantify radiation levels in the plant environs and in radioactivity released to the

environment during normal and accident situations. The finding was evaluated using IMC 0609, Appendix C, Occupational Radiation Safety Significance Determination Process (SDP), and was determined to be of very low safety significance (Green) because the finding is not related to ALARA dose planning, did not result in an overexposure, and the ability to assess dose was not compromised due to the use of appropriate personnel dosimetry and frequent radiological surveys of RCA areas. This finding is not indicative of current licensee performance and therefore has no cross-cutting aspect.

Inspection Report# : [2011004](#) (*pdf*)

Public Radiation Safety

Significance:  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Use Appropriate Radioactive Sources to Calibrate Effluent Monitors.

The inspectors identified two examples of a Green Non-Cited Violation (NCV) of TS 6.8.1, Procedures, for the licensee's failure to implement an adequate Quality Assurance (QA) program for effluent monitoring. Specifically, the secondary calibration (transfer) sources used for effluent monitors 21WL-3541 (Waste Monitor Tanks Discharge) and RM21AV-3509-1SA (Plant Vent Stack Monitor) were not verified to be acceptable prior to use. The licensee has entered these issues into their CAP (AR 537505) and is currently evaluating corrective actions and extent of condition.

The licensee's failure to use appropriate secondary calibration sources to adequately calibrate REM-21WL-3541 and RM-21AV-3509-1SA was a performance deficiency. The finding was more than minor because it is associated with the Public Radiation Safety cornerstone attribute of plant equipment/process radiation monitoring and adversely affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was assessed using Inspection Manual Chapter (IMC) 0609, Appendix D, Public Radiation Safety Significance Determination Process (SDP). The failure to use adequate secondary calibration sources does not represent a substantial failure to implement the radioactive effluents program since each batch release from a Waste Monitor Tank is sampled and analyzed prior to discharge and releases through the Plant Vent Stack are sampled and analyzed weekly. In addition, 10 CFR 20 and 10 CFR 50 dose limits to a member of the public were not exceeded. Therefore this finding was determined to be Green. No cross-cutting aspect was assigned for this finding because the performance deficiency does not represent current licensee performance

Inspection Report# : [2012003](#) (*pdf*)

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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