

Harris 1

3Q/2011 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: FIN Finding

Inadequate Corrective Action Inadvertent Loss of Thermal Barrier HX Flow

The NRC identified a Green finding for licensee's failure to take adequate corrective action for the inadvertent closing of MOV 1CC-252 (Reactor Coolant Pump (RCP) Thermal Barrier Return Flow Isolation Valve) following the start of the standby Component Cooling Water (CCW) pump. As interim corrective action, the licensee revised operating procedures to reflect the issue and initiated compensatory measures which included Standing Instruction 11-0012 to explain that during conditions where the standby CCW pump starts, a transient high flow can be expected that causes 1CC-252 to automatically close. Permanent corrective actions are still being evaluated by the licensee. The licensee entered this issue into the corrective action program (CAP) as NCR 460686.

The licensee's failure to take adequate corrective action for the inadvertent closing of MOV 1CC-252 following the start of the standby CCW pump was a performance deficiency. The finding was more than minor because it was affected the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the licensee failed to evaluate the potential for the RCP thermal barrier to isolate following safety injection (SI) or de-energization of a safety bus upon the auto start of the standby CCW pump. The finding was considered to be of very low safety significance because assuming worst case degradation, the finding would not result in exceeding the Technical Specification (TS) limit for any reactor coolant system (RCS) leakage, result in the total loss of a safety function, did not contribute to both the likelihood of a reactor trip or the likelihood that mitigating equipment or functions would not be available, and did not increase the likelihood of a fire or internal/external flooding. Because the licensee failed to thoroughly evaluate problems such that the resolution(s) address causes and extent of conditions, as necessary, this finding is assigned a crosscutting aspect in the corrective action program of the Problem Identification and Resolution area. P.1(c)

Inspection Report# : [2011008](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Invalid Actuation of Turbine Driven Auxiliary Feedwater Pump

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:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure for Identifying Accumulated Gas in ECCS Systems

• Green. The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to establish adequate instructions to identify accumulated gas in Emergency Core Cooling Systems (ECCS). Specifically, the operations surveillance test procedure, OST-1107, "ECCS flow path and piping filled verification monthly interval – Modes 1-2-3-4-5," Rev 29, could allow accumulated gases inside ECCS to be vented without being quantified and evaluated for potential adverse impacts on system operability. The licensee entered this in their corrective action program (CAP) as ARs #459683 and #459572. The corrective actions included the performance of UTs at 100% of the vented locations prior to venting the system to quantify and evaluate the effects of any gas discovered by the UTs.

The inspectors determined that licensee's failure to establish adequate instructions to identify accumulated gas in ECCS was a performance deficiency. The finding was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, if left uncorrected the potential existed for an unacceptable void that could affect ECCS operability to remain undetected. The inspectors screened this finding in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) since it was a deficiency determined not to have resulted in the loss of operability or functionality as determined by the review of UTs performed by the licensee through the PM program. While the PM UTs were performed at a lower frequency, the results provided reasonable assurance regarding operability of the ECCS. The inspectors determined that the finding has a cross-cutting aspect in the area of problem identification and resolution because the licensee failed to implement operating experience from GL 2008-01 into station procedures (P.2(b)). Specifically, GL 2008-01 stated, in part, that "Volumes that are close to impacting operability may require more sophisticated measurement."

Inspection Report# : [2011003](#) (*pdf*)

Significance: SL-IV Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Report Required Information Related to MSIV Failure

The NRC identified a Severity Level IV violation of 10 CFR 50.73 for the licensee's failure to include all required information in licensing event report (LER) 2010-002-00. The licensee submitted a supplemental LER to include all

required information. The licensee entered this issue into the CAP as NCR 458636.

The licensee's failure to include all pertinent information in LER 2010-002-00 was a performance deficiency. This finding was considered a severity level IV violation in accordance with traditional enforcement as outlined in the NRC enforcement policy. 10 CFR Part 50.73, states in part that the LER shall contain the failure mode, mechanism, and effect of each failed component, if known. Contrary to this, the licensee failed to include specific information related to the main steam isolation valve failure in the LER. The finding was considered to be of low safety significance because it was not repetitive or willful, and was entered into the licensee's corrective action program. The team determined that no cross cutting aspect was applicable to this performance deficiency because traditional enforcement violations are not screened for cross cutting attributes.

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Control of Degraded Voltage Time Delay Settings – Two Examples

The NRC identified a Green, NCV with two examples of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to properly control degraded voltage time delay setpoints. The licensee is evaluating changing the TS and field limits for the relays. Permanent corrective actions are still being evaluated by the licensee. The licensee entered these issues into the CAP as NCR 458376 and NCR 460601.

The failure to properly analyze the degraded voltage time delay setpoints was a performance deficiency. The finding was considered more than minor because it affected with the Mitigating Systems Cornerstone attribute of Design Control, and 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 had not analyzed whether electrical equipment needed to respond to an accident would be energized by the emergency diesel generators within the time considered in the accident analysis if a degraded voltage condition existed concurrent with an accident. In addition, there was reasonable doubt as to whether the permanently connected safetyrelated loads would remain available to respond to a LOOP following a nonaccident degraded voltage condition, for the duration of the time delay chosen for the degraded voltage relay. The finding was of very low safety significance since it was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors did not identify a cross cutting aspect for this finding because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Environmental Qualification on Steam Generator Power Operated Relief Valves

The NRC identified a Green, NCV of 10 CFR 50.49 for the licensee's failure to maintain its Environmental Qualification (EQ) program requirements on the Steam Generator Power Operated Relief Valves (S/G PORVs). While no immediate operability issues were identified, the licensee entered this issue into the CAP as NCR 459807. The licensee plans to properly place the components in the appropriate program.

The licensee's failure to maintain its EQ program requirements on the S/G PORVs was a performance deficiency. This finding was considered more than minor because it affected the Mitigating Systems cornerstone attribute of equipment performance to ensure the availability, reliability, and capability of safety systems that respond to initiating events to prevent undesirable consequences. Specifically, the S/G PORVs are required as per the steam line break analysis in Updated Final Safety Analyses Report (UFSAR) Chapter 15 to mitigate the radiological consequences of a steam line break by allowing the RCS to be cooled to the point where the residual heat removal (RHR) system can be placed in service within eight hours and be brought to cold shutdown within 40 hours after the accident. Removing the S/G PORVs from the EQ program reduced the reliability such that these valves would remain functional following a steam line break, which can subject them to a harsh environment. The finding was of very low safety significance because it was a qualification deficiency confirmed not to result in the loss of operability or functionality. The team determined that no

cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance: **G** Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Non-conservative Calculations for Motor Control Center Control Circuit Voltage

The NRC identified a Green, NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," involving the licensee's failure to perform adequate calculations for Motor Control Center (MCC) control circuit voltage. Immediate actions included testing the MCC contactors to address operability concerns. Permanent corrective actions are still being evaluated by the licensee. The licensee entered this issue into the CAP as NCR 460895.

The failure to perform adequate calculations for MCC control circuit voltage was a performance deficiency. This finding was more than minor because it affected the Mitigating Systems Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was reasonable doubt as to whether safety-related contactors associated with the MCCs would have adequate voltage to operate under degraded voltage conditions. The finding was of very low safety significance since this was a design deficiency confirmed not to have resulted in a loss of operability or functionality. The inspectors did not identify a cross cutting aspect for this finding because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance: **G** Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control Design Limits for ESCW Flow Balancing

The NRC identified a Green, NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to control design limits for Essential Services Chilled Water System (ESCW) flow balancing. Immediate corrective actions included flow balance testing to address operability concerns. Permanent corrective actions are still being evaluated by the licensee. The licensee entered this issue into the CAP as NCR 458046.

The failure to control design limits for ESCW System flow balancing was a performance deficiency. This finding was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of the safety-related ventilation system to respond to initiating events to prevent undesirable consequences. Specifically, an operability limit was added to the ESCW flow balance procedure, based on information from a previous operability evaluation for an identified degraded/nonconforming condition. However, the operability limits established were not integrated into the plant's design basis prior to being incorporated into the procedure and resulted in loss of margin and potentially affected the operability of the system. The finding was of very low safety significance because the finding did not result in a loss of safety function. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance: **G** Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Extend the Design Life for Molded-Case Circuit Breakers

The NRC identified a Green, NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to maintain the qualification bases for safety-related molded case circuit breakers (MCCBs). Immediate corrective actions included review of the MCCB testing and maintenance to validate current status. Permanent corrective actions are still being pursued by the licensee. The licensee entered this issue into the CAP as NCR 460900.

The team determined that the failure to extend the qualified life of the installed Westinghouse MCCBs which were

over 20 years old was a performance deficiency. The finding was more than minor because it affected the Mitigating Systems Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, not maintaining qualified components in safety-related SSCs could lead to the inability to respond to design basis events. The finding was of very low safety significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Test Safety-Related Molded Case Circuit Breakers

The NRC identified a Green, NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," involving the licensee's failure to include 79 safety-related MCCBs in the circuit breaker test program. Immediate corrective actions included review of breaker performance history to address operability concerns. Permanent corrective actions are still being pursued by the licensee. The licensee entered this issue into the CAP as NCR 460953.

The inspectors determined that the failure to periodically test safety related MCCBs was a performance deficiency. The finding was more than minor because it affected the Mitigating Systems Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, not confirming satisfactory performance of safety-related MCCBs could lead to the inability of equipment to respond to design basis events. The finding was of very low safety significance because it was a test deficiency confirmed not to result in loss of operability or functionality. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure Adequate Voltage for Safety Related Components

The NRC identified a Green, NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to establish measures to ensure safety related components had adequate voltage. The licensee entered this issue into the CAP as NCR 458640, NCR 458648 and NCR 460930, and initiated compensatory measures which included Standing Instruction 11-08 to explain that the alternate power supply to the safety related inverters could be subject to inadequate voltage. Permanent corrective actions are still being evaluated by the licensee.

The licensee's failure to perform an analysis to demonstrate that safety related components would have adequate voltage to operate during a design basis accident or transients was a performance deficiency. The finding was more than minor because it affected the Mitigating System Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to perform an analysis that demonstrated that the loads connected to Instrument Distribution Panels (IDPs) S-I, S-II, S-III and S-IV would have adequate voltage when the IDPs are aligned to the output of their respective 7.5kVA safety related inverter or to their respective alternate sources. The finding was of very low safety significance because it was a design issue confirmed not to result in a loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a TS allowed outage time, and did not affect external event mitigation. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Adequate Preventative Maintenance Procedure for Safety-Related Tornado Dampers

The NRC identified a Green, NCV of TS 6.8.1 for the failure to implement an adequate preventative maintenance procedure to ensure reliable operation of the plant's safety-related tornado dampers. Immediate corrective actions included procedure changes, testing of all dampers, and necessary corrective maintenance. In addition, the licensee submitted LER 2011-001 to address a discovered inoperable damper. Additional corrective actions are still being evaluated by the licensee. The licensee entered this issue into the CAP as NCRs 457949 and 458237.

The licensee's failure to implement an adequate preventative maintenance procedure to ensure reliable operation of the plant's safety-related tornado dampers was a performance deficiency. This finding was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of the safety-related ventilation system to respond to initiating events to prevent undesirable consequences and the cornerstone attribute of Protection against External Events, i.e. seismic, weather. Specifically, the failure of the dampers to function properly would impact the ability to maintain required ventilation during an external event. The inspectors assessed the finding using a Phase I SDP screening which determined a Phase III SDP evaluation was required due to the fact that the finding involved the loss or degradation of equipment specifically designed to mitigate a severe weather initiating event (e.g., tornado doors). A Phase III SDP evaluation was performed in accordance with NRC Inspection Manual Chapter 0609 Appendix A by a regional SRA using the NRC SPAR model. The analysis determined that the

performance deficiency resulted in a core damage frequency (CDF) risk increase less than 1E-6/year. Therefore, the finding was characterized as having very low safety significance. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2011008](#) (pdf)

G

Significance: Dec 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Procedure Results in Emergency Safeguards Sequencer Actuation and Safety Injection Signal (SIS) while the Plant was in Mode 6.

A self-revealing Green NCV of Technical Specifications (TS) 6.8.1, Procedures, was identified for the licensee's failure to follow procedure MST-I0073, Train "B" 18 Month Manual Reactor Trip, Solid State Protection System Actuation Logic & Master Relay Test. Specifically, step 7.4.14 of MST-I0073 required the licensee to place the Master Relay Selector Switch (MRSS) in the "Off" position. Contrary to this requirement on October 28, 2010, the licensee failed to place the MRSS in the "Off" position at step 7.4.14. Instead, at step 7.5.85, the technicians noticed that the MRSS remained in Position "3" and then placed the MRSS in the "Off" position. This action combined with the current plant condition caused an invalid "B" train safety injection signal (SIS) and "B" Emergency Safeguards Sequencer (ESS) actuation while the plant was in Mode 6. The licensee entered this issue into their corrective action program (CAP) as action request (AR) #430289. As corrective action, the licensee restored the plant to the pre-actuation condition and conducted training for the maintenance technicians.

The failure to follow procedure MST-I0073 for the proper operation of the MRSS was a performance deficiency. The finding was more than minor because it is similar to the more than minor example 4.b from MC 0612 Appendix E in that an operator incorrectly operated a switch causing a plant transient. Additionally, it is associated with the human performance 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 an invalid SIS causing the ESS to start the "B" ESW and "B" CCW pumps. Using IMC 0609, Significance Determination Process, Phase 1 screening worksheet and Appendix G (Shutdown Operations), Attachment 1, Checklist 4, this finding was determined to be of very low safety significance because it did not meet any of the guidelines which

require quantitative assessment. 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 technicians proceeded in the face of uncertainty without consulting supervision when they encountered unexpected plant conditions (H.4(a)).

Inspection Report# : [2010005](#) (pdf)

Significance: **G** Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with the Limiting Conditions for Operation, While the Refueling Water Storage Tank was Aligned to the Non-seismically Qualified Fuel Pool Purification System.

The inspectors identified a Green NCV of TS 3.1.2.6, Borated Water Sources, for the failure to comply with the limiting conditions for operation, while the Refueling Water Storage Tank (RWST) was aligned to the non-seismic Fuel Pool Purification system (FPPS) for purification, causing the RWST to be inoperable. Specifically, when FPPS was aligned to the RWST, the licensee did not declare the RWST inoperable. The licensee took corrective actions (AR #422180) and revised OP-116.1, FPPS, to remove the capability to purify the RWST in Modes 1 through 4.

The failure to comply with the actions of TS Limiting Condition for Operation (LCO) 3.1.2.6 while the Refueling Water Storage Tank (RWST) was aligned to the nonseismic FPPS for purification on May 24, 2010, causing the RWST to be inoperable, was a performance deficiency. The performance deficiency was more than minor because it affected the Design Control attribute of the Mitigating System 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, when the FPPS was aligned to the RWST, the licensee did not declare the RWST inoperable. The inspectors evaluated the significance of this finding Using Attachment 4 of IMC 0609, the significance of this finding was determined to be of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in loss of operability or functionality, did not represent a loss of system safety function, did not represent actual loss of safety function of a single train for longer than its TS Allowed Outage Time, did not represent an actual loss of safety function of one or more non-TS Trains of equipment designated as risk-significant, and did not screen as potentially risk

significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect of Conservative Assumptions, as described in the Decision Making component of the Human Performance cross-cutting area because, assumptions used in the justification to support the procedure change (i.e. a license amendment was not deemed required to support the procedure change) to OP-116.01 were non-conservative and the review of the issue in May 2010 did not adequately validate the assumptions (H.1(b)).

Inspection Report# : [2010005](#) (*pdf*)

Significance: **G** Dec 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Post Maintenance Test Procedure Results in Deenergization of the "B" Safety Bus and Loss of Decay Heat Removal

A self-revealing Green NCV of TS 6.8.1, Procedures, was identified for the licensee's failure to develop an adequate procedure for the post maintenance test of the recently replaced main generator lockout relay (MGLR). Specifically, the licensee failed to ensure that the post maintenance testing (PMT) was within the clearance boundary that was established for the MGLR replacement. This resulted in the inadvertent deenergization of the "B" Safety Bus and the "B" Residual Heat Removal (RHR) pump, which was the only pump providing decay heat removal (DHR). As corrective action, the licensee entered AOP-25, Loss of One Emergency AC Bus, and restored DHR with the "B" RHR pump after approximately three minutes. The resultant increase in Reactor Coolant System temperature was approximately one degree. Additionally, the licensee plans to revise PLP-400, Post Maintenance Testing, to provide the work planner with additional guidance in the development of PMT for protective relays. The licensee entered this issue into their CAP as AR #431732.

The licensee's failure to develop an adequate procedure for the post maintenance test of the recently replaced MGLR 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 inadvertent deenergization of the "B" Safety Bus and loss of DHR. Using IMC 0609, "Significance Determination Process,"

Phase 1 screening worksheet of the SDP, the inspectors determined that the use of Appendix G, Shutdown Operations Significance Determination Process, was necessary. Using Checklist 3 of Attachment 1 of Appendix G, the inspectors determined that this issue affected both the DHR equipment guidelines and the

emergency electrical bus guidelines and therefore required a Phase 2 analysis. Using Worksheet 8 of Attachment 2 of Appendix G, the inspectors determined that recovery credit was appropriate because 1) sufficient time was available to implement these actions, 2) environmental conditions allow access where needed, 3) procedures exist, 4) training was conducted on the existing procedures under conditions similar to the scenario assumed, and 5) any equipment needed to complete these actions is available and ready for use. Using a time to boil of greater than one hour and the fact that the steam generators were not available for cooling, the result of the Phase 2 was that a Phase 3 was necessary. A regional Senior Reactor Analyst evaluated the performance deficiency under the Phase 3 protocol of the Significance Determination Process. Based upon the results of that evaluation, the performance deficiency was characterized as of very low safety significance (Green). The finding has a cross-cutting aspect of Work Coordination, as described

in the Work Control Component of the Human Performance cross-cutting area because the licensee did not understand the potential operational impact of the work activities or adequately account for current plant conditions (H.3(b)).

Inspection Report# : [2010005](#) (pdf)

Significance:  Dec 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Procedure to Properly Align the MOC Switch Contacts Associated with Breaker 1A-6 Results in Actuation of the "B" MDAFW Pump.

A self-revealing Green NCV of TS 6.8.1, Procedures, was identified for the licensee's failure to correctly implement Section D.2.10 of Engineering Change (EC) #74866R1 when aligning the Mechanism Operated Cell (MOC) switch for the "A" Main Feed Water Pump (MFP) breaker 1A-6. Specifically, the misalignment of the MOC resulted in the inadvertent auto actuation of the "B" Motor Driven Auxiliary Feed Water (MDAFW) pump. As corrective action (AR #432568), the licensee realigned MOC switch contacts under task 3 of Work Order (WO) #01658137 per the instructions of EC #74866R1. Post Modification testing verified contact continuity in both the breaker open and closed and was completed satisfactory.

The failure to follow Section D.2.10 of EC #74866R1 on WO #01658137 task 1 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, the misalignment of the MOC resulted in the inadvertent automatic start of the "B" MDAFW pump. Using IMC 0609, "Significance Determination Process," Phase 1 screening worksheet of the SDP, 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 a 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 tools to ensure the correct alignment of the MOC switch contacts associated with vacuum circuit breaker 1A-6 (H.4(a)).

Inspection Report# : [2010005](#) (pdf)

Significance:  Dec 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Procedural Guidance to Properly Lift/Land Leads

A self-revealing Green NCV of Technical Specification (TS) 6.8.1, Procedures, was identified for the licensee's failure to establish and implement procedural requirements that would ensure the Program "C" relay wiring configuration in the "A" Sequencer remained in accordance with plant drawings following maintenance. Procedure OPS-NGGC-1303, Independent Verification, did not require the use of plant drawings to verify the "As Built" configuration when lifting and landing leads, which ultimately led to the deenergization of the "A" 6.9kV Safety bus during a surveillance test. The licensee took corrective action (AR #424668) and replaced the 86UV/SA relay, tested components within the circuit that could be affected, corrected the wiring issue

and issued a memo to set expectations for utilizing plant design drawings when lifting/landing leads.

The failure to establish and properly implement procedural guidance to maintain the Program “C” relay in the “A” Sequencer wired in accordance with plant drawings following maintenance on April 28, 2009, was a performance deficiency. The performance deficiency was more than minor because it affected the procedure quality attribute of the Mitigating System cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the leads being incorrectly landed would have prevented the “A” EDG from automatically reenergizing the “A” 6.9kV Bus. Using IMC 0609, “Significance Determination Process,” Phase 1 Worksheet, the inspectors concluded that a Phase 2 evaluation was required because this finding represented a loss of safety function of the “A” 6.9kV safety bus. The inspectors performed a Phase 2 analysis using IMC 0609, Appendix A, “Determining the Safety Significance of Reactor Inspection Findings for At-Power Situations” and the site specific risk informed inspection notebook, it was determined that a Phase 3 analysis was required. A regional Senior Reactor Analyst performed a Phase 3 evaluation under the Significance Determination Process and concluded the finding was Green. The finding has a cross-cutting aspect of Documentation and Component Labeling, as described in the Resources component of the Human Performance cross-cutting area because the licensee did not effectively communicate expectations regarding the utilization of design drawings to aid in the proper completion of the verification sign-off form (OPS-NGGC-1303) (H.2(c)).
Inspection Report# : [2010005](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Implement Procedural Guidance to Maintain the FHBEES Boundary

The inspectors identified a Green NCV of Technical Specification (TS) 6.8.1, Procedures, for the licensee’s failure to properly implement procedural guidance to maintain the Fuel Handling Building Emergency Exhaust System (FHBEES) boundary. Specifically, the licensee failed to properly implement procedural guidance to maintain the FHBEES boundary while two doors were propped open on October 21, 2010 and October 22, 2010. This was apparent when the inspectors identified one individual unaware of their responsibilities and another individual inattentive. The licensee entered this issue into their CAP as action request (AR) #428580 and AR #428858. The licensee took corrective action to relieve the inattentive individual and conducted additional training for all of the other individuals responsible for closing the doors.

The failure to properly implement procedural guidance to maintain the FHBEES boundary while two doors were propped open from October 21, 2010 until October 22, 2010 was a performance deficiency. The performance deficiency was more than minor because it was associated with 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. The potential safety consequence is that if spent fuel had been damaged in the spent fuel pool during this time, the FHBEES may not have been able to properly filter and monitor a radioactive release. Using IMC 0609, “Significance Determination Process,” Phase 1 Worksheet, the inspectors determined this issue to be of very low safety significance because it only represented a degradation of the radiological barrier function provided for the fuel handling building. The finding has a cross-cutting aspect of Training and Work Hours, as described in the Resources component of the Human Performance crosscutting area because the licensee did not effectively train the individuals regarding their procedural responsibilities when the FHBEES doors were propped open (H.2(b))
Inspection Report# : [2010005](#) (*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

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : January 04, 2012