Prairie Island 1
2Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO MAINTAIN REACTOR HEAD HEIGHT/DISTANCE LIMITATION FROM REACTOR VESSEL.
A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, was identified by the inspectors on May 23, 2011, due to the licensee's failure to follow Procedure D58.1.10 "Unit 1-Reactor Vessel Head Replacement." Specifically, licensee personnel failed to ensure that the Unit 1 reactor vessel head was lifted no higher than the 756' 3" elevation of the Unit 1 containment when the head was within 15 feet of the reactor vessel flange. Corrective actions for this issue included a human performance event investigation and the issuance of two procedure change requests to provide enhanced knowledge of the height and distance limitations during reactor vessel head movement. The issue was entered into the corrective action program (CAP) as CAP 1287268.

The inspectors determined that this issue was more than minor because, if left uncorrected, the failure to comply with Procedure D58.1.10 could lead to more significant safety concerns including exceeding the reactor vessel head drop/heavy loads analysis criteria. The finding is associated with the Initiating Events Cornerstone. The inspectors contacted a regional Senior Reactor Analyst (SRA) for assistance in determining the risk significance of this finding since the SDP for shutdown conditions did not address reactor vessel head drop concerns. The SRA concluded that the use of IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," was the appropriate method for determining the significance. In accordance with IMC 0609, Appendix M, management review of this issue determined that this finding was of very low safety significance since the movement of the reactor head did not exceed the reactor head drop analysis criteria. This finding was cross-cutting in the area of Human Performance, Work Practices, Supervisory and Management Oversight, because the licensee did not appropriately provide oversight of work activities, including contractors, such that nuclear safety was supported (H.4(c)).
Inspection Report# : 2011003 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
EVALUATION OF EQUIPMENT STORED NEAR SAFETY-RELATED EQUIPMENT.
A finding of very low safety significance and a NCV of 10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," was identified by the inspectors on February 17, 2011, due to the licensee's failure to maintain quality records in accordance with established requirements. Specifically, Procedure FP-G-RM-01, "Quality Assurance Records," designated engineering evaluations as permanent quality records that were required to be retained for the life of the plant. However, licensee personnel were unable to produce several engineering evaluations which had been completed to evaluate the acceptability of scaffolding storage areas in safety-related areas within the auxiliary building. Corrective actions included performing an extent-of-condition review and reconstitution of the engineering evaluations. The issue was entered into the CAP as CAP 1272888.

The inspectors determined that this finding was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 1b, which stated that recordkeeping issues were more than minor if required

records were irretrievably lost. In this case, the inspectors identified that several engineering evaluations associated with the storage of scaffolding near safety-related equipment were irretrievably lost and required reconstitution. Additionally, the inspectors determined the finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective, since the previously completed engineering evaluations were not available to show that the availability, reliability, and capability of equipment located in the scaffold storage areas was maintained. The inspectors evaluated the finding using the SDP and determined the finding was of very low safety significance because it did not result in a loss of system safety function; was not an actual loss of safety function for greater than the Technical Specification (TS) allowed outage time; and did not screen as a potentially significant seismic, flooding, or severe weather issue. No cross-cutting aspect was assigned to this finding as the missing engineering evaluations would have been completed more than 3 years ago and the failure to retain quality records was not reflective of current performance.
Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
GL 2008-01 EVALUATIONS DID NOT ADEQUATELY VERIFY THE DESIGN FOR SUSCEPTIBLE LOCATIONS OF GAS ACCUMULATION IN PIPING SYSTEMS.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the failure to adequately review the design of emergency core cooling, decay heat removal, and containment spray systems for gas susceptible locations. Specifically, the licensee’s original design reviews in response to Generic Letter 2008 01 did not identify all gas susceptible locations (i.e., pipe geometries that can accumulate gas). Corrective actions for this issue included the performance of ultrasonic examinations of most of the affected locations and did not find unacceptable void volumes. The licensee also evaluated the remaining locations for operability using alternative methods. There were no further operability concerns associated with these locations. The issue was entered into the CAP as CAP 1281658.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. The finding is associated with the Mitigating Systems Cornerstone. The finding screened as of very low safety significance because the finding involved a design or qualification deficiency that did not result in a loss of operability. This finding had a cross cutting aspect in the area of problem identification and resolution because the licensee did not implement operating experience through training. Specifically, although relevant operating experience associated with gas susceptible locations was implemented in the procedures used to review the piping system design, the training provided did not adequately address the concepts portrayed by the operating experience contained in these procedures (P.2(b)). (Section 4OA5.6.c(1))
Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
ALTERNATE METHODS WERE NOT DEVELOPED FOR MONITORING INACCESSIBLE SUSCEPTIBLE LOCATIONS.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the failure to follow Procedure H64, “Gas Accumulation Management Program.” Specifically, the licensee failed to develop alternate methods to monitor the potential for void formation at inaccessible susceptible locations that required periodic monitoring. The licensee performed an alternative assessment that reasonably demonstrated that each inaccessible location was not affected by the presence of an adverse void. The licensee also planned to perform an apparent cause evaluation. The issue was entered into the CAP as CAP 1281682.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors determined that this finding was cross-

cutting in the area of human performance, work practices, because supervisory and management oversight did not ensure personnel adherence to the Procedure H64 requirement for the disposition of inaccessible locations (H.4(c)).
Inspection Report# : 2011003 *(pdf)*

Significance: W May 20, 2011
Identified By: NRC
Item Type: VIO Violation
Failure to Ensure that the Train A and Train B DC Electrical Power Subsystems Remained Operable in Modes 1 through 4 (Section 4OA5.1)
An apparent violation of Technical Specification (TS) 3.8.4 was identified by the inspectors due to the licensee's failure to maintain the train A and train B direct current electrical power subsystems operable while operating the reactor in Modes 1 through 4. Specifically, the licensee installed safety related battery chargers which were susceptible to failure during certain design basis events. This issue was entered into the licensee's corrective action program (CAP) as CAP 1250561. Upon identifying this issue, the licensee performed an operability evaluation and determined that the battery chargers remained operable because procedures were in place to recover the battery chargers if a failure occurred. After further interaction with the NRC, the licensee concluded that a designated operator position needed to be established to ensure that a specific individual would perform the battery charger recovery actions prior to the safety related batteries being depleted. Long term corrective actions included replacing all four battery chargers.

This finding was determined to be more than minor because it was associated with the design control and equipment performance attributes of the Mitigating Systems Cornerstone. In addition, this performance deficiency impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed a Phase 1 SDP evaluation and determined that a Phase 2 evaluation was required because this finding represented an actual loss of safety function of a single train of equipment for greater than the TS allowed outage time. The inspectors performed a Phase 2 evaluation using the pre solved SDP worksheets for Prairie Island and determined that this finding screened as Red. A Phase 3 SDP evaluation was required to assess reasonable credit for recovery by operators. The results of the Phase 3 SDP evaluation showed that this finding was preliminarily determined to be White for Unit 1, and Green for Unit 2. No cross cutting aspect was assigned to this finding because licensee decisions made in regards to evaluating the performance of the battery chargers were made many years ago and therefore, not reflective of current plant performance.

Final Significance Determination letter issued on August 17, 2011 (ml112290087).
Inspection Report# : 2011010 *(pdf)*
Inspection Report# : 2011011 *(pdf)*

Significance: G Apr 15, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO APPROPRIATELY COMPLETE AN OPERABILITY RECOMMENDATION FOR THE UNIT 1 BATTERY CALCULATIONS.
An inspector identified finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion V, was identified on February 9, 2011, due to the failure to follow Procedure FP OP OL 01. Specifically, the licensee did not complete an immediate operability determination for all safety related equipment such as the emergency diesel generators and inverters discussed in CAP 1270104. After prompting by the inspectors, the licensee revised the immediate operability determination to ensure that all safety related equipment was properly evaluated for continued operability. Corrective actions included entering of this issue into the corrective action program, revising the immediate operability determination, implementing a daily review of immediate operability determinations, and developing an operability determination/recommendation improvement program to implement additional performance improvement actions.
The inspectors determined that this finding was more than minor because it was an additional example of the significant programmatic concern documented in NRC Inspection Report finding NCV 05000282/2010002-002; 05000306/2010002-002. In addition, the failure to perform proper operability determinations could lead to worse errors, if not corrected. The inspectors concluded that this finding was of very low safety significance because it was not a design deficiency; it did not represent a loss of system safety function; it did not represent a loss of safety

function for one train for greater than the Technical Specifications allowed outage time; and it did not screen as potentially risk significant due to a seismic, flooding or severe weather initiating event. This finding was determined to be crosscutting in the Problem Identification and Resolution, Corrective Action Program area, because the licensee had not taken appropriate corrective actions to address an adverse trend in operability determinations identified by the NRC in March 2010 (P.1(d)).

Inspection Report# : 2011002 *(pdf)*

Significance: G Apr 15, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO APPROPRIATELY COMPLETE AN OPERABILITY RECOMMENDATION ON THE UNIT 1 FUEL OIL SYSTEM.
An inspector-identified finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion V, was identified due to the failure to properly complete an operability recommendation for the Unit 1 fuel oil system in accordance with Procedure FP OP OL 01, “Operability/Functionality Determination.” Specifically, the licensee used a mission time that was not supported by any licensing or design basis document. In addition, the new mission time was inappropriately considered an enhancement to operability. Once a supportable mission time was used, the licensee declare the Unit 1 fuel oil system inoperable due to having an inadequate fuel oil volume. Corrective actions for this issue included entering of this issue into the corrective action program, increasing the fuel oil volume, and implementing an independent review group to review the adequacy of all operability recommendations.
The inspectors determined that this finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone. In addition, this finding impacted the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Using a Phase 3 SDP evaluation, the regional senior reactor analyst determined that this finding was of very low safety significance because the Unit 1 emergency diesel generators would have been able to start and run for the 24 hours assumed in the probabilistic risk assessment using the fuel oil contained in a single storage tank. This finding was determined to be crosscutting in the Problem Identification and Resolution, Corrective Action Program area, because the licensee failed to thoroughly evaluate this problem (including classifying, prioritizing and evaluating the condition for operability) such that the resolution addressed the cause (P.1(c)).
Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PERFORM ADEQUATE POST MODIFICATION TESTING FOLLOWING BATTERY CHARGER REPLACEMENT.
In July 2010, the inspectors identified a finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion III, due to the failure to establish measures to assure that the design of the 12 battery charger was verified using a suitable testing program. Specifically, the test program did not ensure that the 12 battery charger would operate as required during a loss of offsite power event coincident with a loss of coolant accident (LOOP/LOCA event). Corrective actions for this issue included establishing a designated operator to ensure that actions could be taken to reset the 12 battery charger if needed following a LOOP/LOCA event. This designated operator will remain in place until the licensee modifies the 12 battery charger during the next Unit 1 refueling outage.

The inspectors determined that this issue was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone. In addition, this deficiency impacted that cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors completed Phase 1 and Phase 2 SDP evaluations, and determined that a Phase 3 SDP evaluation was required due to this issue being potentially greater than green. The Region III Senior Reactor Analyst (SRA) completed the Phase 3 evaluation and determined that this finding was of very low safety significance due to the low probability of a LOOP/LOCA event and because the licensee had procedural guidance in place to restore the 12 battery charger if required. No cross-cutting aspect was assigned to this finding since the cause of the finding was not reflective of current performance.

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO COMPLETE OPERABILITY DETERMINATIONS IN ACCORDANCE WITH PROCEDURAL REQUIREMENTS.
The inspectors identified a finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion V, in October 2010, due to the failure to complete adequate immediate and prompt operability determination on the D2 emergency diesel generator (EDG) and the 12 battery charger in accordance with Procedure FP OP OL 01, "Operability/Functionality Determination." Corrective actions for this issue included revising the respective operability evaluations to comply with procedural requirements, providing additional training on the operability process to operations and engineering personnel, and implementing a daily management review of operability decisions.
The inspectors determined that the finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone. In addition, this finding impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors completed the Phase 1 and Phase 2 SDP evaluations, and determined that a Phase 3 SDP evaluation was required because the finding was potentially greater than green. The SRA performed a Phase 3 SDP evaluation and determined that this finding was of very low safety significance due to the low probability of a LOOP/LOCA event and because the licensee had procedural guidance in place to restore the 12 battery charger if required. This finding was determined to be cross-cutting in the Problem Identification and Resolution, Corrective Action Program area because the licensee had not taken appropriate corrective actions to address a previously identified adverse trend regarding the adequacy of operability determinations (P.1(d)).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ENSURE COMPLIANCE WITH TS SR 3.8.1.10c.
The inspectors identified a finding of very low safety significance and an NCV of Technical Specification (TS) 3.8.1 in October 2010 due to the failure to demonstrate that the D2 EDG would energize the 12 battery charger within 60 seconds of an actual or simulated LOOP/LOCA event. Specifically, the licensee failed to comply with TS surveillance requirement 3.8.1.10c. Corrective actions for this issue included declaring the D2 EDG inoperable; requesting an exigent TS change from the NRC to address the issues associated with TS Surveillance Requirement 3.8.1.10c; receiving approval of the exigent TS change; and implementing actions to address a long-standing issue with the 12 battery charger.
The inspectors determined that this issue was more than minor because, if left uncorrected, long-standing noncompliance with TS requirements would become a more significant safety concern. The inspectors completed a Phase 1 SDP evaluation and determined that this finding was of very low safety significance because it was not due to an EDG design deficiency; did not result in a loss of safety function for the Unit 1 EDGs; and did not screen as potentially risk significant due to a seismic, flooding or severe weather initiating event. No cross-cutting aspect was assigned to this finding because the decisions which led to the non- compliance were made several years ago and were not reflective of current performance.

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO INCLUDE 121 MOTOR DRIVEN COOLING WATER PUMP (MDCLP) COUPLING HARDNESS INFORMATION IN PROCUREMENT DOCUMENT.
A self-revealed finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion IV,

was identified on July 25, 2010, due to the licensee's failure to specify the required 121 motor driven cooling water pump shaft coupling hardness as part of the procurement process. As a result, the pump was rendered unavailable due to a shaft coupling failure due to excessive hardness of the shaft. Corrective actions for this issue included repairing the cooling water pump and revising the procurement documents to include the required coupling hardness.
The inspectors determined that this issue was more than minor because it impacted the design control attribute of the Mitigating Systems Cornerstone. This finding also impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors completed the Phase 1 and Phase 2 SDP evaluations and determined that a Phase 3 evaluation was required due to this issue being potentially greater than green. The Region III SRA determined that this finding was of very low safety significance because it did not represent an increase in the likelihood of a loss of cooling water initiating event due to different couplings being installed on the other cooling water pumps. The inspectors determined that this finding was cross-cutting in the Problem Identification and Resolution, Corrective Action Program area because the licensee did not use operating experience to support plant safety. Specifically, the licensee did not implement changes to the 121 motor driven cooling water pump after receiving and reviewing multiple pieces of operating experience regarding coupling failures due to hardness issues (P.2(b)).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURE RESULTS IN REMOVING INCORRECT RADIATION MONITOR FROM SERVICE.
A self-revealed finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion V, was identified on November 12, 2010, due to the failure to follow procedure while transferring the power supply for motor control center 1T1 from Unit 1 to Unit 2. The failure to follow procedures resulted in removing safety-related radiation monitor 1R11/1R12 from service and an unplanned entry into TS 3.4.16.B. Corrective actions for this issue included returning radiation monitor 1R11/1R12 to service and re-enforcing the use of human performance tools to operations personnel.
The inspectors determined that this issue was more than minor because, if left uncorrected, the performance of plant activities on the incorrect unit would become a more significant safety concern. The inspectors concluded that this finding was of very low safety significance because the removal of the radiation monitor from service was not a design deficiency; did not result in a loss of system safety function for greater than the TS allowed outage time; and was not potentially risk significance due to seismic, flooding or severe weather initiating events. The inspectors determined that this finding was cross-cutting in the Human Performance, Work Practices area because personnel failed to use human error prevention techniques to ensure that work was performed safely (H.4(a)).

Inspection Report# : 2010005 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ENSURE THAT RHR WOULD BE CAPABLE TO RESPOND DURING MODE 4 EVENTS
A finding of very low safety significance and an associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors on July 12, 2010, due to the failure to establish measures to assure that applicable regulatory requirements and the design basis for the residual heat removal (RHR) system were correctly translated into specifications, drawings, procedures and instructions. Specifically, the licensee failed to have appropriate procedures in place to ensure that the safety function of the RHR system was maintained following valve repositioning to support transitioning from the decay heat removal mode of RHR to providing suction from the refueling water storage tank (RWST) or following a Mode 4 loss of coolant accident.

This performance deficiency was determined to be more than minor because it was associated with the mitigating system cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that this issue was of very low safety significance, because other systems were available for injection into the reactor

coolant system and feed the steam generators; and due to the extremely low probability of a large loss of coolant accident during Mode 4 operations. This finding had no cross-cutting aspect since there was no performance characteristic from IMC 0310 that was a significant contributor to the performance deficiency.
Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 07, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Design Diesels to Survive Tornado Borne Missiles (Section 4OA4.3.01 b)
Green: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control." Specifically, the licensee failed to design the D1/D2 diesel generators to survive impact from the design basis missiles. 10 CFR 50, Appendix B, Criterion III states, in part, that "Measures shall be established to assure that applicable regulatory requirements and the design basis…for those systems, structures, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to this requirement, on July 28, 1994, the licensee approved a calculation that used evaluation methodologies that were not included in the license for the facility. The licensee evaluated the condition and concluded D1/D2 remained operable but non conforming.

The inspectors determined that the failure to design the facility to withstand the impact of the design basis missile was a performance deficiency that warranted a significance evaluation. Using IMC 0612, the inspectors determined the failure to design the D1/D2 diesel to survive an impact from the design basis missile was more than minor because it is associated with the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. The inspectors consulted with the Senior Reactor Analyst (SRA) and determined that the risk associated with the condition was green. No cross cutting aspect was assigned because the performance deficiency from 1994 was not representative of current performance. (Section 3.01 a)
Inspection Report# : 2010009 *(pdf)*

Significance: G Aug 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Fuel Oil Storage Design Did Not Support EDGs 7-Day Supply
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure that the fuel oil storage capability for emergency diesel generators (EDGs) D5 and D6 maintained the minimum volume required to run under accident conditions for seven days as specified in Regulatory Guide 1.137 "Fuel Oil Systems for Standby Diesel Generators." Specifically, with one tank out-of-service, as allowed per procedure, the licensee would not have enough fuel to meet the mission time for one diesel following a single failure of the opposite diesel during an accident conditions. This finding was entered into the licensee's corrective action program and a Temporary Change Request was initiated by the licensee to update the procedure until all issues associated with EDGs fuel oil storage capabilities (i.e., common mode failure, single failure, etc.), are resolved.

The inspectors determined that this finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring availability of the EDG to respond to initiating events to prevent undesirable consequences. This finding was of very low safety significance (Green) because a single storage tank provided sufficient fuel for EDG operation under accident loads for a period greater than the 24-hour probabilistic risk assessment (PRA) mission time. This finding had a cross cutting aspect in the area of Human Performance, Decision Making, because the licensee failed to thoroughly evaluate the impact of downgrading the interconnection between the tanks to non-safety-related and the scenarios and existing practices that it would affect. (IMC 0310, Section 06.01.a.(2) [H.1(b)])

Inspection Report# : 2010006 *(pdf)*

Significance: G Aug 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation

Errors Found in the Electrical Relay Setting Calculation
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” related to calculational errors found in the licensee’s relay setting analysis. Specifically, the protective relay setting calculation for Unit 2 4 KV safeguards switchgear failed to include the over-current relay setting calibration tolerance limits and failed to use the actual field measured value for offsite source transformer neutral grounding resistor in calculating the line to ground fault current. This finding was entered into the licensee’s corrective action program and a preliminary verification performed by the licensee concluded that the relay settings were still acceptable.
The inspectors determined that this finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring availability and reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was of very low safety significance (Green) because the licensee was able to demonstrate that the relay settings were still acceptable. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R21.3.b.(5))

Inspection Report# : 2010006 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
NO FULL FLOW TESTING OF PORV AIR SUPPLY CHECK VALVES.
A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” was identified by the inspectors for the failure to assure that all testing required to demonstrate the check valves installed as part of a temporary modification for low temperature over pressure (LTOP) protection would perform satisfactory in service was identified and performed. Specifically, the licensee failed to verify the check valves would pass the necessary air flow to support the required number of valve strokes assumed in the LTOP analysis. The licensee performed a subsequent test and determined that the check valves would allow adequate air flow rate. The issue was entered into the CAP as CAP 1242980.

The inspectors determined this finding was more than minor because, if left uncorrected, the failure to demonstrate that the check valves would perform satisfactorily in service could result in installing an inadequately designed LTOP system each refueling outage. This finding impacted the Barrier Integrity Cornerstone. The inspectors used IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” and determined that the issue screened out in Phase 1 and did not require a quantitative assessment, because the failure to perform the test did not result in a non-compliance with the LTOP TSs as listed in the various Attachment 1 checklists. Therefore, the finding was of very low safety significance, Green. The inspectors did not identify a cross-cutting aspect associated with this finding because decisions regarding the check valve testing were made several years ago and were not reflective of current performance.
Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EVALUTE THE EFFECTS OF DYNAMIC LOADS AT THE CS DISCHARGE PIPING.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the failure to evaluate the effects of dynamic loads at the containment spray discharge piping. Specifically, neither the structural design nor operation of the containment spray system addressed the dynamic loads that would result when the normally voided discharge piping rapidly fills up following system initiation. As a result of the inspectors concerns, the licensee performed an evaluation that showed that there was reasonable assurance that the system could tolerate the flow-induced dynamic loads following system initiation. The issue was entered into the CAP as CAP 1288035.

The performance deficiency was determined to be more than minor because it was associated with the structure, system, component and barrier performance attribute of the Barrier Integrity Cornerstone, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very low safety significance using IMC 0609 Appendix H, "Containment Integrity Significance Determination Process," because it did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding was cross-cutting in the area of problem identification and resolution because the licensee did not thoroughly evaluate external operating experience. Specifically, the licensee did not address the flow-induced dynamic loads at the containment spray discharge piping as it is rapidly filled up when evaluating the subject of gas accumulation/intrusion as requested by Generic Letter 2008-01 (P.2(a)).
Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PRESCRIBE APPROPRIATE PROCEDURE FOR IN-SERVICE TESTING OF CHECK VALVES.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to develop appropriate procedures when performing in-service testing of check valves 2SI-16-4 and 2SI-16-6. Specifically, the applicable procedures were not revised to account for a recent modification that altered the flow path used when testing these valves. As a result, the potential to mask unacceptable in-service testing results existed, which would cause an inoperable condition to go undetected. The licensee entered the applicable TS for the missed test. Since this in-service test could only be performed during outage conditions, the licensee performed the risk assessment required by the TSs. The assessment showed that the risk to the plant due to the missed test was small. The licensee planned to perform the missed in-service test during the next Unit 2 refueling outage. The issue was entered into the CAP as CAP 1286638.

The inspectors determined that this performance deficiency was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. The finding is associated with the Barrier Integrity Cornerstone. This finding was of very low safety significance because it did not represent an actual open pathway in the physical integrity of reactor containment. The finding had a cross-cutting aspect in the area of human performance, work control, because the licensee did not appropriately coordinate work activities by incorporating actions to address the need for work groups to communicate and coordinate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3(b)).
Inspection Report# : 2011003 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY ASSESS AND MANAGE RISK DURING PLANNED MAINTENANCE ACTIVITY.
The inspectors identified finding of very low safety significance and an NCV of 10 CFR 50.65 a(4) on August 31, 2010, due to a failure to properly assess and manage the risk associated with performing planned maintenance activities on the 111 switchgear unit cooler and the 121 control room chiller. Specifically, the licensee failed to identify these maintenance activities as high risk and implement additional risk management actions prior to starting the maintenance. As a result, an unexpected low suction pressure condition occurred on the 122 control room chiller pump. Corrective actions included restoring from the maintenance activities.
The inspectors determined the finding was more than minor because if left uncorrected, the failure to properly assess and manage plant risk could result in the need to shut down both reactors (a more significant safety concern) due to a loss of control room cooling function. This finding was determined to be of very low safety significance because it was not specific to the radiological barrier provided by the control room ventilation system; was not a degradation of the barrier function of the control room against smoke or a toxic atmosphere; did not represent an actual open pathway in the reactor containment; and it did not involve an actual reduction in the function of hydrogen ignitors. The inspectors concluded that this finding was cross-cutting in the area of Human Performance, Work Control area

because the licensee did not plan and coordinate work activities consistent with nuclear safety (H.3(a)).

Inspection Report# : 2010005 *(pdf)*

Significance: G Aug 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate the Adequacy of Voltage for Safety-Related Equipment
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the failure to consider design basis accident temperature and voltage variations when performing an operability evaluation of safety-related equipment with very low voltage margin. Specifically, during the 2010 CDBI self-assessment, a licensee’s reviewer identified concerns regarding an operability evaluation that failed to consider the design basis accident temperatures and voltage. Although the licensee placed this issue in their corrective action program, the licensee failed to assess operability. After identification by the team, the licensee determined the associated equipment were operable or operable but non-conforming.

The inspectors determined that this finding was more than minor because it was associated with Barrier Integrity cornerstone attribute of design control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance (Green) because the finding was a not degradation of a boundary, was not an open pathway and did not impact the hydrogen igniters. This finding had a cross-cutting aspect in the area of problem identification and resolution in the component of self assessment because the 2010 CDBI self-assessment concerns were not evaluated and corrected. (IMC 0310, Section 06.02c.(3) [P3(c)]) (Section 1R21.3.b.(2))

Inspection Report# : 2010006 *(pdf)*

Significance: G Aug 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Analysis Used to Determine PORV/LTOP Setpoint
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to have adequate calculation used to ensure reactor vessel 10 CFR Part 50, Appendix G limits are not exceeded. Specifically, the design calculation performed by Westinghouse to determine the pressurizer power operated relief valve (PORV) lift setting for low temperature overpressure protection (LTOP) analysis failed to include the correct inputs for mass addition transient, and also failed to consider the seismic and environmental terms in the instrument uncertainty calculations. The licensee subsequently entered this finding into their corrective action program and
performed an operability evaluation and determined the PORVs remained operable and capable of performing their LTOP functions.

The inspectors determined that this finding was more than minor because it was associated with the Barrier Integrity cornerstone attribute of design control and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance (Green) because it did not result in non-compliance with LTOP TS and the licensee’s operability evaluation concluded that based on the last testing of the PORV opening stroke time, the predicted peak pressure was determined to be below the adjusted Appendix G pressure limit. Therefore, the PORVs remained operable and capable of performing their LTOP functions.
The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R21.3.b.(3))

Inspection Report# : 2010006 *(pdf)*

Significance: G Aug 30, 2010

Identified By: NRC
Item Type: NCV NonCited Violation
PORV Stroke Timing Acceptance Criteria Failed to Include Instrument Response Time
The inspectors identified a finding having very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” for the licensee’s failure to ensure adequate acceptance limits were incorporated into test procedures. Specifically, the acceptance criteria for allowable pressurizer power operated relief valve (PORV) opening stroke time within the periodic test procedure was not consistent with the original design criteria for low temperature overpressure protection (LTOP) analysis. The acceptance criteria limits did not include the instrument response time. This finding was entered into the licensee’s corrective action program and a review of most recent tests showed the valves stroke time were acceptable and the valves were operable.

The inspectors determined that this finding was more than minor because it was associated with the Barrier Integrity cornerstone attribute of design control and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance (Green) because the function of the PORV opening in the required time had always been maintained and the finding did not result in non-compliance with LTOP TS. This finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R21.3.b.(4))

Inspection Report# : 2010006 *(pdf)*

Emergency Preparedness

Significance: SL-IV Apr 10, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
INCOMPLETE AND INACCURATE EMERGENCY ACTION LEVEL CHANGE SUBMITTAL.
The NRC identified a Severity Level IV Non-Cited Violation of 10 CFR 50.9 for failing to provide complete and accurate information for prior approval of a new Emergency Action Level (EAL) scheme. The licensee’s submittal to the NRC, entitled, “Revision to Emergency Action Levels,” dated October 22, 2004, was not complete and accurate in all material respects. The submitted EAL scheme specified instrument threshold values for Alert classifications, EALs RA1.1 and RA1.2, which were beyond the indicated ranges of the effluent radiation monitors R 18, R-25, and R-31. The NRC accepted and approved the proposed EALs not realizing the information was incomplete and inaccurate.

The violation potentially impedes or impacts the regulator process, it was dispositioned using the traditional enforcement process as described in NRC Inspection Manual Chapter 0612, Revision 04/30/10. Using Section 6.9 of the Enforcement Policy and after consultation with the Director of the Office of Enforcement, this issue was determined to be a Severity Level IV violation. Specifically, though the NRC would have questioned the issue with additional and correct information, the EAL ultimately would have been acceptable with an adjustment in the indicator range or EAL entry criteria value. In either case, it would not have resulted in substantial further inquiry. Additionally, the associated technical violation was determined to be of very low safety significance.

The associated performance deficieincy is tracked as item 2011502-002.
Inspection Report# : 2011502 *(pdf)*

Significance: G Apr 07, 2011
Identified By: NRC
Item Type: FIN Finding
Failure to identify that information provided to the NRC was Incomplete and Inaccurate regarding Emergency Action Level setpoints (1EP4.1.b)
The NRC identified a performance deficiency for the licensee's failure to identify that the EAL submittal sent to the NRC for Alert classification EALs RA1.1 and RA1.2 were beyond the range of the associated instruments, but the information was submitted to the NRC anyway. The licensee’s submittal to the NRC, entitled, “Revision to Emergency Action Levels,” dated October 22, 2004, was not complete and accurate in all material respects. The NRC

accepted and approved the proposed EALs not realizing the information was incomplete and inaccurate.

The inspectors determined that the licensee's failure to provide complete and accurate information to the NRC, a violation of 10 CFR 50.9, was a performance deficiency and within the licensee's ability to foresee and prevent. The deficiency was determined to be more than minor because it was associated with the Emergency Preparedness Cornerstone attribute of Procedure Quality.

The associated Traditional Enforcement item is tracked as 2011502-001.
Inspection Report# : 2011502 *(pdf)*

Occupational Radiation Safety

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ASSESS THE IMPACT OF CHANGES IN THE PLANT'S ISOTOPIC PROFILE.
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 20.1501.b due to the licensee's failure to evaluate the impact of changes in the isotopic profile (i.e., changes in the isotopic mix and percent abundance of specific radioisotopes) on the radiation monitoring instrumentation and the radiation assessment and measurement program. Corrective actions included performing an evaluation of the isotopic profile on the licensee's radiation monitoring instrumentation. No substantive adjustments to the program were necessary. The licensee also planned to revise applicable procedures to ensure that changes to the isotopic profile continued to be evaluated. The issue was entered into the CAP as CAP 1280900.

The inspectors determined that this finding was more than minor because, if left uncorrected, the performance deficiency would have led to a more significant safety concern. This finding was associated with the Occupational Radiation Safety Cornerstone. Additionally, this issue did not involve As-Low-As-Is Reasonably-Achievable planning or work controls; there was no overexposure or substantial potential for an overexposure to a worker; nor was the licensee's ability to assess dose compromised. Based on the information above, the inspectors concluded that the finding was of very low safety significance using IMC 0609, Appendix C, as guidance. The inspectors also reviewed the issue and no cross-cutting aspects were identified since decisions regarding the need to evaluate changes in the isotopic mix were made several years ago and were not reflective of current performance.
Inspection Report# : 2011003 *(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 : October 14, 2011