Callaway
1Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Sep 27, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Verify Material Properities Prior to Installation
The inspectors reviewed a self-revealing finding involving failure to verify the proper material was installed in the plant during a modification to the circulating water pumps. Specifically, Request for Resolution 201300416 specified the use of ASTM A276 410 stainless steel cap screws with a tensile strength around 186 ksi. Contrary to this, 410 stainless steel cap screws with a tensile strength between 201 ksi and 221 ksi were installed. Because the tensile strength was much higher, and thus more brittle and susceptible to stress corrosion, these cap screws were not appropriate for the application. This led to failure of the cap screws and the separation of the shaft coupling for circulating water pump B after less than one operating cycle in service, degrading condenser vacuum. The licensee removed the modification and installed the original type cap screws. This issue was entered into the licensee's corrective action program as Callaway Action Request 201404722.
The inspectors determined that failure to verify the correct materials were installed in the plant during a modification was a performance deficiency. This performance deficiency is more than minor because it is associated with the equipment performance attribute of the Initiating Events Cornerstone and affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as during power operations. Specifically, failure to install the correct material resulted in failure of circulating water pump B and degrading condenser vacuum. The inspectors evaluated the finding using NRC Inspection Manual 0609, Appendix A, Exhibit 1, "Initiating Event Screening Questions." The inspectors determined the finding was of very low safety significance (Green) because the transient initiator did not cause a reactor trip and the loss of mitigating equipment. This finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee relied on the vendor to provide the correct material and did not verify the cap screws met the material specification.
Inspection Report# : 2014004 *(pdf)*

Mitigating Systems

Significance: G Mar 21, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Perform Post-maintenance Testing on Safety-related Equipment Prior to Declaring it Operable
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to conduct post-maintenance testing after maintenance on safety-related equipment prior to declaring the system operable in accordance with Procedure ODP-ZZ-00002, "Equipment Status Control," Revision 76. Specifically, the train A component cooling water system was declared operable before performing post-maintenance testing on the

train A safety injection pump lube oil cooler cooling water outlet relief valve after this valve was replaced. Additionally, when the post-maintenance test was later performed, it failed to meet acceptance criteria. Despite the failure, the licensee did not enter the condition into their corrective action program nor write a new job to address the test failure in accordance with Procedure APA-ZZ-00322, Appendix E, "Post Maintenance Test Program." The licensee entered this issue into their corrective action program as Callaway Action Request 201501853 and performed a second post-maintenance test, which was completed satisfactorily.
The licensee's failure to verify that all post-maintenance testing had been completed prior to declaring the system operable was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is similar to example 5.b in Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," and it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, on October 29, 2014, the train A component cooling water system was declared operable and returned to service for approximately 7 hours without completion of post-maintenance testing. When the post-maintenance testing was performed, it failed to meet the acceptance criteria due to system leakage at the flanged connection. No further actions were taken when the leakage was identified resulting in the train A component cooling water system having a known unevaluated degraded condition adversely affecting the reliability of the system between October 29, 2014, and March 19, 2015. Using Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to be of very low safety significance because it did not affect system design, did not result in a loss of system function, did not represent a loss of function of a single train for greater than its technical specifications allowed outage time,
and did not cause the loss of function of one or more non-technical specification trains of equipment designated as high safety-significance. Specifically, the component cooling water leakage could be made up from a safety-related source without loss of function.
This finding has a work management cross-cutting aspect in the human performance cross-cutting area because the licensee did not appropriately implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. Specifically, omitting the correct equipment out of service log entry from the post-maintenance test work task led to operations returning the equipment to service prior to it being tested.
Inspection Report# : 2015001 *(pdf)*

Significance: G Dec 31, 2014
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Correct a Condition Adverse to Quality on Safety Related Equipment
Inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," involving the licensee's failure to correct a condition adverse to quality. Specifically, an extent of condition review for a failed gasket identified that other safety related gaskets installed in the plant were potentially less reliable; however, no action was taken. One of these gaskets failed on October 17, 2014, and caused a 52 gpm leak from the end bell of the train B control room air conditioning chiller affecting the reliability of the train. This issue was entered into the licensee's corrective action program as Callaway Action Request 201409335. One remaining improperly installed gasket was evaluated and operability was justified.

The inspectors determined the failure to correct a condition adverse to quality was a performance deficiency. This performance deficiency was more than minor because it was associated with and adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone, and affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during the period of November 2013 to October 2014, the failure to correct an improperly installed gasket on a control room air conditioning unit resulted in reduced reliability of the safety related system. Using NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to be of very low safety significance (Green) because it did not affect the design or qualification of the system, did not result in a loss of system function, did not represent a loss of function of a single train for greater than its technical specifications allowed outage time, and did not cause the loss of function of one or more non-technical specification trains of equipment designated as high safety-significance. The finding has an Evaluation cross-cutting aspect within the problem identification and resolution area because the licensee failed to thoroughly evaluate and ensure that the resolution addressed the extent of condition commensurate with its safety significance. Specifically, the extent of condition for improperly installed safety related gaskets was identified; however, the evaluation of the degraded condition did not assess the significance and cause corrective actions to be scheduled in a timely manner commensurate with that significance.
Inspection Report# : 2014005 *(pdf)*

Significance: G Sep 27, 2014
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Perform Nondestructive Testing on Essential Service Water Piping in Accordance with Procedures
The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform nondestructive testing on portions of the essential service water system known to be susceptible to wall thinning in accordance with procedures. As a result, the licensee failed to identify wall thinning prior to developing a through-wall leak that rendered train A inoperable. Specifically, despite procedural guidance to the contrary, technicians only used the low frequency electromagnetic technique testing, which cannot monitor bends and portions of welds. They also failed to properly calibrate this equipment, and failed to perform ultrasonic testing on the portions of essential service water system that could not be properly monitored by use of low frequency electromagnetic technique. The resultant through-wall leaks were repaired according to ASME code standards. The licensee entered this issue into their corrective action program as Callaway Action Request 201405200 and planned to re-perform testing during the fall of 2014.

Failure to follow procedures while performing nondestructive testing on portions of the essential service water system was a performance deficiency. This performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to perform nondestructive testing on portions of the essential service water system that were known to be susceptible to wall thinning resulted in the failure to prevent a through-wall leak affecting the availability of a safety related system. Using NRC Inspection Manual 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the finding was determined to be of very low safety significance because it only affected a single train, and resulted in a loss of function for less than its technical specifications allowed outage time. This finding has a procedure adherence cross-cutting aspect within the human performance area because the licensee failed to ensure that individuals followed processes, procedures, and work instructions. Specifically, licensee oversight failed to ensure that contractors followed specific guidance in their procedures for both ensuring that the low frequency electromagnetic technique tool was appropriately calibrated and areas unable to be scanned were tested utilizing ultrasonic testing.
Inspection Report# : 2014004 *(pdf)*

Significance: G Aug 29, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Follow Operability Procedure
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to assess operability in accordance with Station Procedure APA-ZZ-00500 Appendix 1, "Operability and Functionality Determinations," Revision 22. Specifically, the licensee failed to assess operability when taking safety-related electrical cabinets and switchgear out of their seismically qualified configuration during maintenance activities. The licensee entered this deficiency into their corrective action program for resolution as Callaway Action Request 201405359.

The licensee's failure to assess the basis for operability of a degraded or nonconforming condition was a performance deficiency. This performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the associated objectives to ensure availability, reliability, and capability of systems that responds to initiating events to prevent undesirable consequences. Specifically, the licensee's failure to assess and document operability resulted in conditions of unknown operability for degraded or nonconforming conditions. The finding is of very low safety significance (Green) because although it affected the qualification of one or more mitigating systems, structures or components (SSCs), these SSCs maintained their functionality. The finding has a cross-cutting aspect in the area of human performance associated with how the organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. In this case, the licensee's work control process failed to evaluate the activity in order to assure nuclear safety.
Inspection Report# : 2014008 *(pdf)*

Significance: G Aug 29, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Analyze for Tornado Missile Strike on Turbine Driven Auxiliary Feedwater Steam Exhaust Piping
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the design of the turbine-driven auxiliary feedwater pump exhaust stack to be able to withstand the effects of natural phenomena. Specifically, the licensee failed to verify that the exhaust stack of the turbine was protected from the effects of tornado-generated missiles. The licensee entered this deficiency into their corrective action program for resolution as Callaway Action Request 201405508.

The licensee's failure to verify the adequacy of the design was a performance deficiency. This performance deficiency was more than minor because it was associated with protection against external events attribute of the mitigating systems cornerstone and adversely affected the 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 ensure the reliability of the turbine-driven auxiliary feedwater pump after a postulated tornado missile impact to the steam exhaust piping. The finding was of very low safety significance because it represented a qualification deficiency that did not result in the loss of operability or functionality. The finding had a cross-cutting aspect in the area of problem identification and resolution for the licensee's failure to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance.
Inspection Report# : 2014008 *(pdf)*

Significance: G Jul 02, 2014

Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish Adequate Procedures for Testing the Load Tap Changers on Transformers XNB01 and XNB02.
The team identified a Green, non-cited violation of Technical Specification 5.4.1, which states, in part, "Written procedures shall be established, implemented, and maintained covering the following activities: Part a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." Regulatory Guide 1.33, Appendix A, Section 9, "Procedures for Performing Maintenance," states in part, "Maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances." Specifically, from 2002 to April 24, 2014, due to the ineffective corrective action of Callaway Action Request (CAR) 200202970, the licensee did not establish preventative maintenance procedures to verify the operation and timing of the engineered safety feature transformers XNB01 and XNB02 load tap changers. In response to this issue, the licensee verified that immediate operability was not a concern since the measured parameters for the transformers did not indicate poor health or unsatisfactory performance. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201402827.

The team determined that the failure to establish adequate preventative maintenance procedures to periodically verify the operation and timing of the engineered safety feature transformers XNB01 and XNB02 load tap changers was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to perform initial or periodic verification of the operation and timing of the engineered safety feature transformers XNB01 and XNB02 load tap changers could result in adverse operation of the load tap changer during a design basis event such that the safety-related buses may not have adequate voltage to reset the degraded voltage relay, thus spuriously disconnecting from the offsite power source. In accordance with Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
10 CFR 50.59 Screen for the Auxiliary Feedwater Motor Operated Control Valves Thermal Overload Relays.
The team identified a Severity Level IV, non-cited violation
of 10 CFR Part 50.59, "Changes, Tests and Experiments," which states, in part, "A licensee may make changes in the facility as described in the final safety analysis report, make changes in the procedures as described in the final safety analysis report, and conduct tests or experiments not described in the final safety analysis report without obtaining a license amendment only if: (ii) The change, test, or experiment does not meet any of the criteria in paragraph (c)(2) of this section." Paragraph (c)(2), states in part: "A licensee shall obtain a license amendment prior to implementing a proposed change, test, or experiment if the change, test, or experiment would: (ii) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC), important to safety previously evaluated in the final safety analysis report." Specifically, on September 5, 2008, the licensee failed to complete a 10 CFR Part 50.59 Evaluation when they initiated Final Safety Analysis Report Change Notice

(FSARCN) 08-012 to Final Safety Analysis Report Section 8.3.1.1.2, to exempt auxiliary feedwater control valves (ALHV0005, 0007, 0009, and 0011) from the requirements of Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," Revision 1. For these auxiliary feedwater control valves, the licensee chose to leave the thermal overload relays in the motor operated valve circuits continuously, but failed to periodically test them to ensure continued functional reliability and the accuracy of the trip point. In response to this issue, the licensee verified that no actual safety consequences had occurred with the auxiliary feedwater system motor operated control valves. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201403369.

The team determined that the licensee's failure to identify that the proposed Final Safety Analysis Report change to their commitment to Regulatory Guide 1.106 Revision 1, requiring an evaluation to be performed, was a performance deficiency. This finding was evaluated using traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. This finding was more than minor because there was a reasonable likelihood that the change would have required NRC review and approval prior to implementation. Specifically, during the 10 CFR Part 50.59 screen, the licensee failed to determine that the proposed Final Safety Analysis Report change to their commitment to Regulatory Guide 1.106, Revision 1, did involve a change to a structure, system, or component, such that it did adversely affect an Final Safety Analysis Report described design function, which required an evaluation to be performed. In accordance with Inspection Manual Chapter 0612, Appendix B, "Issue Screening," traditional enforcement does apply as the violation impacted the regulatory process. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. The team assessed the violation in accordance with the Enforcement Policy, and determined it to be a Severity Level IV violation because it resulted in a condition evaluated by the Significance Determination Process as having very low safety significance (Enforcement Policy example 6.1.d.2). This finding did not have a cross-cutting aspect because cross-cutting aspects are not assigned to traditional enforcement violations.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Follow Procedures by Not Identifying a Conflict Between Two Procedures
The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Specifically, on October 23, 2006, the licensee failed to follow Procedure APA-ZZ-00101, "Processing Procedures, Manuals, and Desktop Instructions," when the reviewer did not realize that a revised step in Procedure EDP ZZ 01126, "Lubrication Predictive Maintenance Program," Revision 6, conflicted with requirements in Procedure APA-ZZ-00500, "Corrective Action Program." The licensee failed to identify that a new procedure step, which allowed licensee personnel the discretion to not initiate a Callaway Action Request when an abnormal or adverse condition was identified, was in conflict with expectations for initiating Callaway Action Requests for adverse conditions stated in Procedure APA-ZZ-00500. In response to this issue, the licensee will review their guidance documents and procedure training, along with their root cause procedure, because the conflict with the procedures had not been identified during the root cause investigation of the Essential Service Water Pump "B" lower motor bearing degradation. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201403046.

The team determined that the failure to identify that a revised step in

Procedure EDP-ZZ-01126 was conflicting with expectations for initiating Callaway Action Requests for adverse conditions stated in Procedure APA-ZZ-00500 was a performance deficiency. This finding was more than minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, Revision 6 to Procedure EDP-ZZ-01126, "Lubrication Predictive Maintenance Program," was revised to allow licensee personnel the discretion of not using the Callaway Action Request System to document an abnormal or adverse condition when a bad oil sample had been identified. Consequently, the lubrication predictive maintenance program procedure, as written, has the potential to miss diagnosing/reporting of equipment problems and degradation prior to equipment failure. The original oil sample taken in October 2012 indicated a degraded condition, and it was not until a subsequent oil sample taken in February 2013, caused the licensee to write a Callaway Action Request when the Essential Service Water Pump "B" lower motor bearing had degraded, and the pump was taken out-of-service for replacement. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish Essential Service Water Pump House Supply Fan Testing.
The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," which states, in part, "A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Specifically, from 1999 to April 17, 2014, the licensee failed to establish a test program to demonstrate that the air flows for essential service water pump house supply fans CGD01A and CGD01B would keep the pump house room temperatures at or below the maximum allowable temperatures when the essential service water pumps are operating during a design basis accident. In response to this issue, the licensee verified that immediate operability was not a concern since the measured parameters (through eMAX and Motor Circuit Evaluator-+ testing) did not indicate poor health or unsatisfactory performance when compared to the fan curve. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201402698.

The team determined that the failure to establish a test program to demonstrate that the air flows for the essential service water pump house supply fans were sufficient to keep room temperatures maintained at or below the design basis requirements was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Equipment Performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the capability of the essential service water pump house supply fans to perform their safety function of providing 30,000 cubic feet per minute of air flow was not ensured. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Adequately Analyze Maximum Electrical Equipment Temperatures Resulting from the Single Failure of Control Building Heating Ventilation/Air Conditioning.
The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled." Specifically, prior to April 25, 2014, the licensee had failed to account for the temperature differences between inside and outside of electrical cabinets in the Class 1E electrical rooms, as well as the effects of these increased temperatures on the components in the cabinets with a single control building chiller out-of-service. In response to this issue, the licensee performed a preliminary review of the calculation and confirmed that the components within the cabinets would continue to function in the event of a transient or accident with a single control building chiller out-of-service. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201402872.

The team determined that the failure to adequately account for increased temperatures within the Class 1E electrical cabinets, and the effect on the components in those cabinets, was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Equipment Performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to evaluate the increased temperatures within the cabinets in Calculation NAI-1719-001 could establish non-conservative results that could lead to component failures, causing critical electrical equipment not to function. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect, pertaining to identification, in the area of problem identification, because the licensee did not ensure that the organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program.

Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure To Review Motor Operated Valve (MOV) Data and Complete Analysis of the Data in a Timely Manner.
The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Specifically, between November 2013 and April 2014, the licensee did not follow Procedure EDP-ZZ-01114, "Motor Operated Valve Program Guide," Step 6.3.1, as they

had not completed a test report for Motor Operated Valve BNLCV0112E, “Centrifugal Charging Pump Suction from Refueling Water Storage Tank Isolation Valve,” within 60 days, as required by the procedure. The results of the analysis, when completed, were non-conservative with the measured stem coefficient increasing from the design value of 1.5 to approximately 1.7, decreasing the available torque margin from approximately 23 percent to 7 percent. In response to this issue, the licensee confirmed that all of the values in the Performance Report for BNLCV0112E were accurate and that the valve would still function. The licensee also initiated a work order to restore the valve margin. The licensee determined that several other diagnostic test results had not been analyzed in a timely manner; and evaluated these results which were found to be acceptable. This finding was entered into the licensee's corrective action program as Callaway Action Requests (CARs) 201402987 and 201402992.

The team determined that the failure to follow Procedure EDP-ZZ-01114 for the timely evaluation of motor operated valve test data was a performance deficiency. This finding was more than minor because if left uncorrected, it would lead to a more significant safety concern. Specifically, not reviewing motor operated valve data and completing the analysis of the data in a timely manner could result in safety-related motor operated valves not being able to meet their safety function. In accordance with Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect, pertaining to resources, in the area of human performance, because licensee leaders failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Adequately Account for Motor Operated Valve Unseating Torque in Torque Calculation.
The team identified a Green non-cited violation of 10 CFR 50, Appendix B,
Criterion XI, “Test Control,” which states, in part, “A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.” Specifically, prior to May 1, 2014, the licensee failed to include the motor operated valve unseating torque in the motor operated valve torque calculation. This could establish non-conservative results that could lead to the valve not functioning. In response to this concern, the licensee performed informal analyses based on the most recent test results and verified that all the subject valves were functional. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201403034.

The team determined that the failure to include the motor operated valve unseating torque in the calculation of the required torque was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Equipment Performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to include the valve disc unseating force in the torque calculation could establish non-conservative results that could lead to a failure of the valve to perform its safety function. The initial evaluation, based on a design friction coefficient of 0.2, identified four valves with zero or negative margin, however additional evaluation determined these valves were functional. In accordance with Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical

specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2014007 *(pdf)*

Significance: G Jul 02, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Procedure for Cooling Instrumentation During a Station Blackout Event.
The team identified a Green, non-cited violation of 10 CFR Part 50.63(a)(2) which states, in part, "The reactor core and associated coolant, control, and protection systems, including station batteries and any other necessary support systems, must provide sufficient capacity and capability to ensure that the core is cooled and appropriate containment integrity is maintained in the event of a station blackout for the specified duration." Specifically, from April 15, 2011 to July 2, 2014, a change made to Emergency Operating Procedure Addendum 20, "Control Room Cabinet Door List," Revision 003, required control room operators to open a minimum of one control room cabinet door during a station blackout. Emergency Operating Procedure Addendum 20, Revision 003, was completed without any analysis or calculations performed to justify whether the electronics in the cabinets would have sufficient cooling with a minimum of one door open during a station blackout. This could result in insufficient cooling to the Solid State Protection System (SSPS) and other essential controls during a station blackout. In response to this issue, the licensee initiated actions to make the procedures consistent regarding how many doors should be opened for the given cabinets, and for engineering to investigate how many doors should be opened. This finding was entered into the licensee's corrective action program as Callaway Action Request (CAR) 201403029.

The team determined that the failure to ensure that components located in control room cabinets, which provide input for the Solid State Protection System (SSPS), would remain operable during a station blackout, as assumed in the site's station blackout analysis, was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Procedure Quality, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the change made to EOP Addendum 20, Revision 003, had been completed without documented review of the site's station blackout analysis or its assumptions to justify whether the components in the cabinets would have sufficient cooling with a minimum of one door open per cabinet during a station blackout. By not analyzing the concern to determine the effect of the temperature of the instrumentation and components in the cabinets, the licensee may subject the electronic components contained in the cabinets to temperatures that could degrade their capability to ensure core cooling and containment integrity. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding had a cross-cutting aspect, pertaining to change management, in the area of human performance, because the licensee had not used a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Without documented results of an analysis or justification, for the 2011 evaluation, the assumptions could not be verified to justify their actions.
Inspection Report# : 2014007 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation

Inadequate Extent of Condition Review
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform an adequate extent of condition assessment. While performing an evaluation of pitting corrosion identified on buried refueling water storage piping, the licensee failed to provide an adequate technical justification for not expanding the scope of their review beyond the specific piping when pitting corrosion was identified in the original sample selection. Licensee procedural guidance for a Significance Level 3 adverse condition requires the reviewer to identify other potentially susceptible systems or components and fully explain the boundary for the extent of condition, but this was not done. This finding does not represent an immediate safety concern. The licensee entered the finding into their corrective action program as Callaway Action Request 201402168. This finding affected safety-related piping in which pitting was observed and repaired prior to being returned to service.

The licensee's failure to perform an adequate extent of condition review of the pitting of the buried 24 inch refueling water storage tank piping in the essential core cooling system supply line is a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because if left uncorrected, it has the potential to lead to a more significant safety concern if other welds on this same pipe render it susceptible to pitting corrosion in the weld heat affected zone. The finding affects the Mitigating System Cornerstone because the performance deficiency is related to the essential core cooling system's ability to conduct short-term decay heat removal. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, did not result in the loss of operability or functionality of a single train for greater than the technical specification allowed outage time, and did not represent an actual loss of safety function for greater than 24 hours. This finding has a cross-cutting aspect in the conservative bias component of the human performance cross-cutting area because the licensee did not use conservative decision-making practices that emphasize prudent choices over those that are simply allowable.

Inspection Report# : 2014003 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: FIN Finding
Plastic Shipping Plug in Rosemount Transmitter
The inspectors identified a finding for the licensee's failure to properly install a flow transmitter for the containment spray system. Specifically, since construction, Rosemount Transmitter ENFT0005, which provides a signal for containment spray train A pump flow rate, had a plastic shipping plug installed in the spare conduit port instead of the vendor-required stainless steel plug. The licensee did not include this transmitter as part of an operating experience extent of condition walkdown conducted in 2010 because the transmitter provides indication only and does not have an active safety function. However, the inspector determined that this transmitter provides operator post-accident monitoring capability of containment spray pump performance. The licensee entered this issue into the corrective action program as Callaway Action Request 201403300. The licensee reviewed this deficiency and determined that although Transmitter ENFT0005 was degraded, the containment spray system remained operable. The licensee promptly replaced the plastic shipping plug with the required stainless steel plug.

Failure to properly install a Rosemount transmitter needed for post-accident monitoring to its qualified configuration was a performance deficiency. This performance deficiency was more than minor, and therefore a finding, because it adversely affected the configuration control attribute and the Barrier Integrity Cornerstone objective to provide

reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the improperly configured containment spray flow transmitter could have resulted in erratic spray flow indication, which could impede operators' ability to monitor this parameter and act upon the indication. The finding is of very low safety significance (Green) because containment spray is not a significant contributor to large early release frequency. This finding does not have a cross cutting aspect because the transmitter was installed in this manner during original construction and, thus, was not indicative of current licensee performance.

Inspection Report# : 2014003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 16, 2015