

Cooper

1Q/2016 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Preclude Repetition for a Significant Condition Adverse to Quality

The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," associated with the inadequate extent of condition and extent of cause evaluations to preclude repetition for a significant condition adverse to quality identified in a 2012 root cause evaluation documented CR-CNS-2012-07174 for the isolation of shutdown cooling system isolation in valves RHR-MOV-17 and RHR-MOV-18 due to localized pressure perturbations at the pressure sensors. Specifically, in 2012, the licensee failed to conduct an adequate extent of cause and condition evaluation to preclude repetition of this event from occurring on May 30, 2015 with the reactor plant in Mode 4. On May 30, 2015, isolation of shutdown cooling system isolation valves RHR-MOV-17 and RHR-MOV-18 due to localized pressure perturbations at the pressure sensors, led to the isolation of the shutdown cooling system for approximately 22 minutes. The station entered Station Procedure 2.4SDC, "Shutdown Cooling Abnormal," Revision 14, and restored shutdown cooling. The reactor coolant system temperature increased approximately 20 degrees Fahrenheit but did not exceed 212 degrees Fahrenheit, maintaining the reactor plant in Mode 4. The licensee entered this deficiency into the corrective action program as Condition Report CR-CNS-2015-03188.

The licensee's failure to conduct an adequate extent of cause and condition evaluation to preclude repetition of a significant condition adverse to quality identified in a 2012 root cause evaluation documented in CR-CNS-2012-07174 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the Initiating Events Cornerstone, and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown. Specifically, the failure to preclude repetition of the isolation of shutdown cooling system isolation valves RHR-MOV-17 and RHR-MOV-18 due to localized pressure perturbations at the pressure sensors led to the isolation of the shutdown cooling system for approximately 22 minutes when the reactor plant was in Mode 4 on May 30, 2015. Using Inspection Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Process Phase 1 Initial Screening and Characterization of Findings," dated May 9, 2014, inspectors determined that the finding did not require a quantitative assessment because adequate mitigating equipment remained available, and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as a very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect because the most significant contributor of this finding occurred in 2012, and does not reflect current licensee performance.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Prevent Reactor Thermal Power from Exceeding 2419 MWt for Preplanned Activity

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, associated with the licensee's failure to appropriately implement General Operating Procedure 2.1.10, "Station Power Changes," Revision 107. Specifically, the procedure required in Step 10.3 that the licensee, "Ensure any pre-planned evolution (e.g., pressure change, flow change, etc.) will not result in operation greater than 2419 MWt." On May 8, 2015, the licensee failed to implement Step 10.3 of General Operating Procedure 2.1.10, when they failed to reduce power to ensure that reactor power did not exceed 2419 MWt as the reactor recirculation motor generator 'B' scoop tube was unlocked. As a result of this failure to reduce power for this planned evolution, reactor power increased to 2422 MWt. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2015-04259.

The performance deficiency is more than minor, and therefore a finding, because it is associated with the human performance attribute of the Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge safety functions during shutdown as well as power operations. Specifically, the licensee did not know the condition of the reactor recirculation – motor generator set B potentiometer prior to unlocking it and failed to reduce power such that when the scoop tube was unlocked, the resulting power increase would not exceed 2419 MWt. The inspectors screened the finding using Inspection Manual Chapter 0609, Appendix A, Exhibit 2, Section C, "Reactivity Control Systems," which resulted in a 'Yes' answer to Question 2 since the finding involved control manipulations that unintentionally added positive reactivity. This referred the inspectors to Inspection Manual Chapter 0609, Appendix M, "Significance Determination Using Qualitative Criteria." A Senior Reactor Analyst performed a bounding qualitative evaluation and determined that the finding was of very low safety significance (Green) because of the relatively small magnitude of the overpower event, the prompt operator actions to return power to below the licensed limit upon discovery, and the fact that the overpower event did not result in any failure of the fuel cladding. This finding has a cross-cutting aspect in the area of human performance associated with conservative bias. Specifically, the affected evolution was known in advance to have the possibility of a positive reactivity impact; however, operators did not take appropriate actions to reduce power sufficiently prior to unlocking the reactor recirculation – motor generator set B scoop tube in order to prevent the reactor from exceeding 2419 MWt.

Inspection Report# : [2015002](#) (*pdf*)

Significance:  May 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform an Operability Review of a Condition Report

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 procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures." Specifically, prior to April 6, 2015, the licensee failed to follow Procedure .05.OPS, "Operations Review of Condition Reports/Operability Determination," to ensure that an operability review was performed for Condition Report CR-CNS-2015-01268, which was initiated during the self-audit for the Component Design Bases Inspection to

document that Cooper Nuclear Station has under-voltage relays that could be affected by harmonics. In response to this issue, the licensee performed an operability review and an operability evaluation for the under-voltage relays. This finding was entered into the licensee's corrective action program as Condition Report CR-CNS-2015-02337.

The team determined that failure to perform an operability review associated with Condition Report CR-CNS-2015-01268 was a performance deficiency. This finding was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown, as well as power operations. Specifically, the licensee failed to perform the required operability review for the identified condition. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 1, "Initiating Event Screening Questions," the issue screened as having very low safety significance (Green) because the finding did not cause a reactor trip and it did not involve the loss of mitigation equipment. This finding had a cross-cutting aspect in the area of human performance associated with teamwork because individuals and work groups failed to communicate and coordinate their activities across organizational boundaries to ensure nuclear safety is maintained.

Inspection Report# : [2015007](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow ASME Code Requirements when taking Corrective Actions for a Pump in the Required Action Range

The inspectors identified a non-cited violation of 10 CFR 50.55a, "Codes and Standards," for the licensee's failure to follow the ASME Code for Operation and Maintenance of Nuclear Power Plants when addressing the performance of reactor equipment cooling pump A within the high "required action range" of the inservice testing program. Specifically, on February 11, 2016, the licensee failed to follow ASME Subsection ISTB 6200(b) when engineering personnel, taking corrective action to address pump performance, failed to either correct the cause of the deviation or establish new reference values for the pump. Instead of establishing new reference values, the licensee performed an analysis to administratively raise the upper "required action range" limit, creating a wider range of acceptable pump operation than allowed by Table ISTB 5100 1, "Centrifugal Pump Test Acceptance Criteria." The licensee entered this issue into the corrective action program as Condition Report CR CNS 2016 00920, took action to reevaluate and rebaseline the pump with new reference values, and performed an extent of condition review to determine if other equipment was impacted by similar interpretations of the code.

The licensee's failure to establish new reference values for reactor equipment cooling pump A in accordance with the ASME Code was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human 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. Specifically, the actions initially taken by the licensee would have required a relief request; could have delayed identification of a degrading pump trend due to the creation of a wider range of acceptable operation; and the licensee's generic interpretation, that the Table ISTB 5100 1 "acceptable range" could be administratively expanded, represented a programmatic vulnerability. The inspectors used Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and determined that the finding had very low safety significance (Green) because it did not represent a design

or qualification deficiency, did not represent a loss of safety function for a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with evaluation. Specifically, the licensee failed to thoroughly evaluate performance of reactor equipment cooling pump A in the “required action range” to ensure that the resolution correctly addressed the causes of the degraded performance [P.2].

Inspection Report# : [2016001](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Diesel Fuel Oil Cloud Point Acceptance Criteria not in accordance with ASTM D975, Revision 1989a

The inspectors identified a non-cited violation of Technical Specification 5.5.9, “Diesel Fuel Oil Testing Program,” for the licensee’s failure to establish an emergency diesel generator fuel oil cloud point acceptance criterion in accordance with ASTM D975, “Standard Specification for Diesel Fuel Oils.” Specifically, the diesel fuel oil cloud point acceptance criterion of = 32°F specified in the licensee’s diesel fuel oil testing program procedures was not in accordance with the ASTM limit of = 3.2°F and was not technically justified as described by the standard. Corrective actions included development of an evaluation which concluded that the appropriate acceptance criterion was = 15°F based on the most limiting day tank room temperatures during accident conditions; verification that the cloud point of the fuel onsite at the time was 8.6°F, which met this criterion; and establishment of compensatory measures to monitor and administratively control the cloud point until fuel oil program procedures could be revised. The licensee entered this deficiency into the corrective action program as Condition Reports CR-CNS-2015-06745, CR-CNS-2015-06717, CR-CNS-2015-06718, and CR-CNS-2015-7150.

The licensee’s failure to establish a diesel fuel cloud point acceptance criterion in accordance with ASTM D975, in violation of Technical Specification 5.5.9, was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the procedure quality 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 establish a diesel fuel cloud point acceptance criterion in accordance with ASTM D975 could result in formation of wax crystals affecting the capability to transfer the fuel oil from the storage tanks to the emergency diesel generator engine cylinders. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Finding At-Power,” dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program. The finding had a cross-cutting aspect in the area of human performance associated with documentation because the licensee failed to create and maintain complete, accurate, and up-to-date documentation for the worst case temperature at which the emergency diesel generator fuel oil would be stored.

Inspection Report# : [2015004](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Ensure Turbine Building Design Calculation was Correct and Justified

The inspectors identified a 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, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions.” Specifically, prior to September 29, 2015, the licensee prepared Calculation NEDC 13-028, “Ultimate Internal Pressure of Turbine Building Blowout Panels and Metal Wall System,” Revision 1, in accordance with Engineering Procedure 3.4.7, to ensure pressure relief in the turbine building due to a main steam line break would occur at less than or equal to 0.5 pounds per square inch differential pressure as stated in Amendment 25 to the Cooper Nuclear Station Final Safety Analysis Report. However, the inspectors determined that the methodology and assumptions employed in Calculation NEDC 13-028 were not adequate and could not conclude that it ensured siding failure as required. In response to this issue, the licensee performed an operability determination to ensure that safety-related structures, systems, and components and the control room were not adversely affected by a main steam line break. The licensee entered this deficiency into the corrective action program as Condition Report CR-CNS-2015-05705.

The licensee’s failure to ensure that a turbine building design calculation was correct and justified was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the design control 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, Calculation NEDC 13-028 did not ensure that safety-related structures, systems, and components and the control room, which are necessary for responding to initiating events, would not be adversely affected by a main steam line break in the turbine building. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 2, “Mitigating Systems Screening Question,” dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program. This finding had a crosscutting aspect in the area of human performance associated with conservative bias because individuals failed to use decision making practices that emphasize prudent choices over those that are simply allowed.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow Primary Containment Atmosphere Sampling Procedure

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a for the licensee’s failure to appropriately implement a procedure required by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, on June 2, 2015, a chemistry technician failed to implement Station Procedure 8.8.12, “Primary Containment Oxygen or Noble Gas Activity Grab Sample Analysis,” Revision 14. This

resulted in the incorrect primary containment isolation sample valve being operated, which resulted in both divisions of primary containment H2O2 analyzers tripping on low pressure/flow. Operations personnel declared both divisions of primary containment H2O2 analyzers inoperable and entered Limiting Condition for Operation 3.3.3.1, "Post Accident Monitoring Instrumentation," Conditions A and C, and restored them to an operable status in accordance with station procedures. The licensee entered this deficiency into the corrective action program as Condition Reports CR-CNS-2015-03292.

The licensee's failure to operate the correct primary containment isolation sample valve, in support of primary containment atmosphere sampling, in violation of Station Procedure 8.8.12, was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Question," dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program. The finding has a human performance cross-cutting aspect within the avoid complacency area because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes, which resulted in individuals not implementing appropriate error reduction tools.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Jun 26, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate a Valve Degraded Condition before Returning the Valve to Service

The team identified a non-cited violation of Technical Specification 5.4.1.a regarding implementation of maintenance procedures for work on safety-related motor-operated valves (MOVs). Specifically, a degraded component within the actuator was not evaluated as acceptable to use as is before returning the valve to service. The Division 2 low-pressure coolant injection (LPCI) Throttle valve, RHR-MOV-MO27B, failed in the closed position during a surveillance test. The licensee's investigation revealed that the helical motor pinion gear in the Limitorque valve actuator broke in three parts. This failed pinion gear additionally caused damage to part of the motor shaft where the setscrew engaged the shaft to attach the pinion gear. The licensee's corrective action was to drill the setscrew hole slightly deeper, and reuse the motor shaft when reassembling the Limitorque motor actuator and returning the valve to an operable status. The licensee failed to document this process through an engineering evaluation to accept the setscrew and motor shaft repair use-as-is per their engineering change procedure. The evaluation was performed after the valve was returned to service and determined that the setscrew configuration was acceptable. The licensee entered this issue into the corrective action program as Condition Report CR-CNS-2015-00880.

The licensee's failure to perform an evaluation for a degraded condition when performing safety-related MOV

maintenance in violation of Procedure 3-EN-DC-115, “Engineering Change Process,” is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency resulted in the reuse of the motor shaft in the actuator to Valve RHR-MOV-MO27B, as acceptable to use-as-is even though a degraded condition existed, returning the valve to operable status without performing the required engineering evaluation. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power, the inspectors determined the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time; and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. The finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, the licensee failed to perform an evaluation of the setscrew location to ensure that that location was properly drilled and tapped. This was due to a lack of coordination between the maintenance and engineering groups.

Inspection Report# : [2015008](#) (pdf)

Significance: G Jun 26, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Adequately Torque Fasteners on Emergency Diesel Generator Number 2

The team reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” which occurred when the licensee failed to include specific instructions in work orders with respect to the use of lubrication during emergency diesel generator (EDG) fastener torquing. The failure to include specific lubrication instructions in work orders resulted in the inadequate torquing of bolting on the number 2 EDG and contributed to a lube oil leak during a surveillance run of the affected diesel. Procedures in effect during the time the fasteners were torqued required planners to include specific lubrication instructions in work orders for the EDGs. The licensee corrected the current issue by properly lubricating and torquing the fasteners for the right bank camshaft and restored the EDG 2 to operable status. The licensee entered this issue into the corrective action program as condition report CR-CNS-2014-06885.

The failure to specify lubricants in EDG work order instructions involving fastener torquing, in violation of Procedure 7.2.53.12, “Cooper Bessemer Bolting and Torque Program,” is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Additionally, if left uncorrected, it has the potential to lead to a more significant safety concerns, in that the failure to include these instructions in work orders has resulted in, and could continue to result in loose fasteners on the emergency diesel generator. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power; the inspectors determined the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time, and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. The finding has a cross-cutting aspect in the problem identification and resolution area due to the organization’s failure to take effective corrective actions to address the deficiency after it was identified in a 2010 root cause evaluation and failure to recognize the ineffectiveness of the previous corrective actions until after the lube oil

leak in 2014.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 26, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Main Steam Isolation Valve Scram Closure Condition Prohibited By Technical Specifications

The team identified two examples of a non-cited violation of Technical Specification 3.3.1.1, “Reactor Protection System Instrumentation,” required Action A, for the licensee’s failure to place inoperable main steam isolation valve closure scram channels in trip within 12 hours when Surveillance Requirement 3.3.1.1.9 to perform channel functional testing was not met. Specifically, on January 31 and May 16, 2015, the licensee tested inboard main steam isolation valves MS-AOV-80A and MS-AOV-80B limit switches associated with main steam isolation valve closure scram channel multiple times prior to declaring them operable. The licensee did not evaluate for pre-conditioning of the limit switches to determine if the actual as found condition was masked, and did not ensure the discrepancy was corrected, before repeating the surveillance test. This resulted in repetitive testing to achieve acceptable results that led to declaring the limit switches operable. The station did enter the required action statements for Technical Specification 3.3.1.1 for MS-AOV-80A limit switch A on May 16, 2015, and MS-AOV-80B limit switch A on May 19, 2015. All inboard main steam isolation valve limit switches in question were replaced during Planned Outage 2015-01 conducted from May 30 to June 1, 2015. The licensee entered this issue into the corrective action program as condition reports CR-CNS-2015-03456, CR-CNS-2015-03483, and CR-CNS-2015-03484.

The licensee’s failure to adequately assess operability during multiple performances of channel functional surveillance testing for reactor protection system main steam isolation valve closure scram function in violation of Technical Specification 3.3.1.1, “Reactor Protection System Instrumentation,” is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the licensee did not evaluate for pre-conditioning of the limit switches to determine if the actual as-found condition was masked, and ensure the discrepancies were corrected, before repeating the surveillance test. This resulted in repetitive testing to achieve acceptable results that led to declaring the limit switches operable. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Finding At-Power,” dated June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) did not affect a single reactor protection system trip signal to initiate a reactor scram and the function of other redundant trips or diverse methods of reactor shutdown (e.g. other automatic reactor protection system trips, alternate rod insertion, or manual reactor trip capacity); (2) did not involve control manipulations that unintentionally added positive reactivity (e.g., cold-water injection, inadvertent control rod movement, recirculation pumps speed control); and (3) did not result in a mismanagement of reactivity by the operator(s) (e.g., reactor power exceeding the licensed power limit, inability to anticipate and control changes in reactivity during crew operations). The finding has a cross-cutting aspect in the area of human performance associated with procedural adherence because individuals did not follow processes, procedures, and work instructions.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 20, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Evaluate the Lack of Missile Protection on the Emergency Diesel Generator 1 and 2 Fuel Oil Storage Tank Vents

The team identified a Green, cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” which states, in part, “Design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.” Specifically, since July 2010 the licensee failed to verify the adequacy of design of the vents for the emergency diesel generator 1 and 2 fuel oil storage tanks to withstand impact from a tornado driven missile hazard, or to evaluate for exemption from missile protection requirements using an approved methodology. This finding was entered into the licensee’s corrective action program as Condition Report CR-CNS-2015-02366.

The team determined that the failure to evaluate the lack of missile protection on the emergency diesel generator 1 and 2 fuel storage tank vents was a performance deficiency. This finding was more than minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to events to prevent undesirable consequences. Specifically, the licensee failed to evaluate a design nonconformance on the emergency diesel generator 1 and 2 fuel storage tanks for lack of missile protection. 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,” this finding 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 in the area of human performance associated with conservative bias because individuals failed to use decision making practices that emphasize prudent choices over those that are simply allowable.

Inspection Report# : [2015007](#) (pdf)

Inspection Report# : [2016001](#) (pdf)

Significance:  May 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Maintain Design Modifications to Prevent Fire Protection System Water Hammer

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” which states, in part, that “design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.” Specifically, prior to April 6, 2015, the licensee failed to maintain procedure changes to periodically monitor and add nitrogen to fire protection system headers in the reactor building to mitigate the effects of water hammer. In response to this issue, the licensee determined that the fire protection system remained functional without nitrogen based on empirical evidence suggesting that the system was capable of absorbing the shockwave from a water hammer event. This finding was entered into the licensee’s corrective action program as Condition Report CR-CNS-2015-02085.

The team determined that the failure to adequately maintain control of the fire protection system design to prevent water hammer events was a performance deficiency. This finding was more than minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to events to prevent undesirable consequences. Specifically, the licensee failed to maintain procedure changes to periodically monitor and add nitrogen to fire protection system headers in the reactor building. 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.

The team determined that this finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : [2015007](#) (pdf)

Significance: N/A May 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Update the Final Safety Analysis Report (FSAR)

The team identified three examples of a Severity Level IV, non cited violation, of 10 CFR 50.71, “Maintenance of Records, Making of Reports,” Section (e), which states, in part, “each person licensed to operate a nuclear power reactor under the provisions of 10 CFR 50.21 or 10 CFR 50.22 shall update periodically the final safety analysis report (FSAR) originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. This submittal shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the licensee since the submittal of the original FSAR, or as appropriate, the last update to the FSAR under this section.” Specifically, in January 2012 and February 2015, the licensee failed to update the Updated Safety Analysis Report for changes made to their Anticipated Transient Without Scram analyses and plant conduct of operations procedures. This finding was entered into the licensee’s corrective action program as Condition Reports CR-CNS-2015-02106, CR-CNS-2015-02090, and CR CNS-2015-02393.

The team determined that the failure to update the Final Safety Analysis Report to assure that the information included in the report contains the latest information developed 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 each example potentially rendered portions of the safety analyses for Anticipated Transient Without Scram events described in the Updated Safety Analysis Report less conservative or contradicted previous information regarding the licensee’s flooding analysis contained in the Updated Safety Analysis Report. The traditional enforcement violation was determined to be a Severity Level IV violation consistent with the example in paragraph 6.1.d(3) of the NRC Enforcement Policy. Since this was a traditional enforcement violation, no cross-cutting aspects were assigned per the guidance contained in Inspection Manual Chapter 0612, Section 07.03(c).

Inspection Report# : [2015007](#) (pdf)

Barrier Integrity

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Assess Operability of Technical Specification System Functions during Surveillance Testing

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, for the licensee’s failure to follow Station Procedure 0.26, “Surveillance Program,” and assess the operability of high pressure coolant injection steam line isolation instrumentation during surveillance testing. Specifically, the licensee failed to assess the operability of required isolation instrumentation when maintenance personnel opened terminal box 392 during surveillance testing and temporarily invalidated its environmental qualification. Licensee procedures required operations personnel to either establish compensatory measures to restore the terminal box during an event, or declare the instrumentation inoperable and enter the applicable technical specification actions when the terminal box was opened. As an immediate corrective action, the licensee implemented Standing Order 2016 03, which directed operators to establish compensatory measures, if applicable, or declare the affected equipment inoperable when environmentally qualified

terminal boxes would be opened during testing. The licensee entered this issue into their corrective action program for resolution as Condition Reports CR CNS 2016 00320 and CR CNS 2016 00476.

The licensee's failure to assess the operability of high pressure coolant injection instrumentation when the associated terminal box was opened during surveillance testing, in violation of Station Procedure 0.26, was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the structure, system, component, and barrier performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to ensure the radiological barrier functionality of containment isolation. Specifically, with terminal box 392 open, its environmental qualification was temporarily invalidated, making the high pressure coolant injection low steam pressure and high steam flow containment isolation instrumentation inoperable during surveillance testing. In addition, two other terminal boxes and their associated surveillances were impacted by the performance deficiency. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that the finding had very low safety significance (Green) because it: (1) did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, or heat removal components; and (2) did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The finding had a cross-cutting aspect in the area of human performance associated with work management. Specifically, the licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority, including the identification and management of risk commensurate with opening terminal box 392 during surveillance testing [H.5].

Inspection Report# : [2016001](#) (*pdf*)

Emergency Preparedness

Significance: G Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform a Complete Evaluation of the Licensee Interface With Offsite Organizations

The inspectors identified a non-cited violation of 10 CFR 50.54(t)(2), for the licensee's failure to include an evaluation of the adequacy of the interfaces with state and local governments in a review of emergency preparedness program elements in Audit 2014-06, dated November 7, 2014. Specifically, the licensee failed to include an evaluation of this interface when audit personnel did not provide offsite officials with an opportunity to provide their view of the adequacy of the interface to the audit team. Corrective actions included development of lessons learned for future audits and reengagement with state and local governments to assure adequate interface existed during the most recent emergency preparedness audits. The licensee entered this deficiency into the corrective action program as Condition Report CR-CNS-2015-06403.

The failure to perform an evaluation for adequacy of the interface with state and local governments was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the offsite emergency preparedness attribute of the Emergency Preparedness Cornerstone, and affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the ability to implement adequate measures to protect the health and safety of the public could be affected if communication and coordination problems between the licensee and offsite agencies are not detected and corrected. The finding was evaluated using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 22, 2015, and was determined to have very low safety significance (Green) because it was a failure to comply with NRC requirements, was not a loss of planning standard function, and was not a degraded planning standard function.

The finding had a cross-cutting aspect in the area of problem identification and resolution associated with evaluation because the licensee failed to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the audit team failed to fully evaluate the potential for problems to exist with the adequacy of the interface with state and local governments.
Inspection Report# : [2015004](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Significance:  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Ensure Measurement Conditions were Consistent With Instrument Calibration

The inspectors identified a non-cited violation of 10 CFR 20.1501(c) for the failure to ensure measurement conditions were consistent with instrument calibration parameters for the elevated release point monitor, compromising the ability to accurately determine the concentration of radioactive effluents released. Specifically, water intrusion/condensation in the elevated release point Kaman normal range effluent monitor noble gas sample chamber introduced discrepancies relative to the calibration geometry and water in the particulate filter and iodine cartridge adversely affected the sample media collection efficiencies. Immediate corrective actions included the licensee performing a functionality assessment of the monitor. The licensee entered this deficiency into the corrective action program as Condition Reports CR-CNS-2015-05051 and CR-CNS-2015-05067.

The failure to ensure measurement conditions were consistent with instrument calibration parameters for the elevated release point monitor was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Public Radiation Safety Cornerstone attribute of plant equipment/process radiation monitoring and adversely affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The inspectors used IMC 0609, "Significance Determination Process," Attachment D, "Public Radiation Safety Significance Determination Process," February 12, 2008, and determined the finding to be of very low safety significance (Green) because it was associated with the effluent program; however, it was not a substantial failure to implement the effluents program and it did not result in a public dose greater than an Appendix I criterion or 10 CFR 20.1301(e). The finding has a cross-cutting aspect in the area of problem identification and resolution associated with identification, because the organization failed to implement the corrective action program with a low threshold for identifying issues. Specifically, plant personnel failed to initiate condition reports, as required by procedure, on 89 occasions since the discovery on March 24, 2015.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Control Licensed Material

The inspectors reviewed a self-revealing non-cited violation of 10 CFR 20.1802 for the failure to control licensed material not in storage when the licensee sent 14 bags of radioactively contaminated dirt and debris to an off-site landfill for disposal. Immediate corrective actions included the licensee retrieving the contaminated material and returning it to site. The licensee entered this deficiency into the corrective action program as Condition Report CR-CNS-2013-03392.

The failure to control licensed material that was not in storage was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the human performance attribute of the Public Radiation Safety Cornerstone and adversely affected the cornerstone objective of assuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The inspectors used IMC 0609, "Significance Determination Process," Attachment D, "Public Radiation Safety Significance Determination Process," February 12, 2008. The inspectors determined the finding to be of very low safety significance (Green) because the finding involved radioactive material control but it did not result in an exposure to the public in excess of five millirem. The finding has a cross-cutting aspect in the area of human performance, associated with work management, because the licensee did not implement a process of planning, controlling, and executing work activities such that safety was the priority. Specifically, the licensee did not control work activities involving multiple organizations such that radioactive material remained controlled on site.

Inspection Report# : [2015003](#) (*pdf*)

Security

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

Miscellaneous

Significance: N/A Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Make a 10 CFR 50.72(b)(2)(xi) Notification

The inspectors identified a non-cited violation of 10 CFR 50.72(b)(2)(xi) because the NRC Operations Center was not notified within four hours of a reportable event

related to the health and safety of the public for which notification to other government agencies had been made. Specifically, in May 2013, the licensee did not notify the NRC of its notification to the State of Nebraska about an inadvertent release of 14 bags of radioactively contaminated dirt and debris to a public landfill. To correct this condition, the licensee notified the NRC Operations Center of this event on August 26, 2015.

This violation was evaluated using traditional enforcement because the failure to make a required report could adversely impact the NRC's regulatory process. Using the criteria contained in Section 6.9(d)(9) of the NRC's Enforcement Policy, this violation was determined to be Severity Level IV. The licensee entered this deficiency into the corrective action program as Condition Report CR-CNS-2015-0544. Cross-cutting aspects are not assigned to traditional enforcement violations.

Inspection Report# : [2015003](#) (*pdf*)

Last modified : July 11, 2016