

## Cooper

# 3Q/2015 Plant Inspection Findings

---

## Initiating Events

**Significance:** G 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:**  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:** G 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:** G 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:** G 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)

**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:**  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Inadequate Operations Procedure**

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, associated with the inadequate Operation’s Procedure 2.2.7, “Condensate Storage and Transfer System,” Revision 56. Specifically, the procedure did not require that the affected system, either the high pressure coolant injection system or the reactor core isolation cooling system, be declared inoperable when one or more of the high pressure coolant injection or reactor core isolation cooling test return line isolation valves, HPCI-MOV-21, HPCI-MOV-24, RCIC-MOV-30, or RCIC-MOV-33, were moved off of their closed (passive safety function position) seats. The license entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2015-00274.

The failure to establish and maintain a correct filling procedure required by Technical Specification 5.4.1.a. was a performance deficiency and resulted in the licensee’s failure to declare the high pressure coolant injection and reactor core isolation cooling systems inoperable when required to do so. The performance deficiency is more than minor,

and therefore a finding, because it is associated with the procedural quality 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. Specifically, the high pressure coolant injection and reactor core isolation cooling systems were not declared inoperable when their test return line isolation valves, HPCI-MOV-21, HPCI-MOV-24, RCIC-MOV-30, and RCIC-MOV-33, were taken off their normally closed (passive safety function position) seats. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) 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, 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 cross-cutting aspect in the area of human performance associated with Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction techniques. Specifically, licensee personnel fell into a pattern of acceptance regarding Procedure 2.2.7. This resulted in a failure to question the lack of an operability caution statement, even though there was other guidance in the inservice inspection program to that effect.

Inspection Report# : [2015001](#) (*pdf*)

---

## Barrier Integrity

**Significance:** G Dec 31, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

### **Failure to Follow Procedure for Post Maintenance Testing**

The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” associated with the licensee’s failure to follow Special Procedure GEH-TP-116, “Procedure for the Operation and Maintenance of the REM\*TAKE-2/D-100 Modified REM\*TAKE 2,” Revision 3, for postmaintenance testing following corrective maintenance. Specifically, the licensee did not follow post-maintenance testing requirements associated with the calibration of the bleeder valve for the REM\*TAKE-2/D-100 tool following corrective maintenance to address water intrusion. This resulted in the bleeder valve being misadjusted and nullifying the fail-safe feature of the REM\*TAKE-2/D-100 tool. With the fail-safe nullified, Control Rod Blade 30-47 became disengaged from the REM\*TAKE-2/D-100 tool and dropped onto the reactor core top guide when the supplemental employee inadvertently pressed the disengage button. No reactor fuel was damaged as indicated by normal radiation levels and air samples on the refuel floor and reactor water coolant samples. The licensee’s immediate corrective actions for the event was to suspended all in-vessel maintenance activities and remove REM\*Take-2/D-100 grapple from service and determined functionality of the tool. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2014-06809.

The licensee’s failure to follow the post-maintenance testing requirements in Special Procedure GEH-TP-116 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 Barrier Integrity Cornerstone and affected the associated objective of maintaining functionality of fuel cladding. Specifically, with the fail-safe nullified, Control Rod Blade 30-47 became disengaged from the REM\*TAKE-2/D-100 tool and dropped onto the reactor core top guide when a

supplemental employee inadvertently pressed the disengage button. Using Inspection Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," dated May 09, 2014, inspectors determined that the finding was of very low safety significance (Green) because the finding did not impact the fuel barrier because it: (1) does not increase the potential for failure of the freeze seal or if unmitigated have the potential to cause a disruption of residual heat removal/decay heat removal or a loss of inventory event; (2) does not involve two or more adjacent control rods with the potential to, or actually, add positive reactivity; and (3) does not degrade the ability to isolate a drain down or leakage path. The finding has a cross-cutting aspect in the area of human performance associated with the field presence component because the licensee failed to ensure supervisory and management oversight of work activities including contractors and supplemental personnel.

Inspection Report# : [2014005](#) (*pdf*)

---

## Emergency Preparedness

---

## 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

Last modified : December 15, 2015