

Columbia Generating Station 1Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 23, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Subject Diesel Generator Intake Air Pre-Filters to the Controls of the Quality Assurance Program

The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion II, "Quality Assurance Program," for the licensee's failure to apply the applicable quality assurance requirements of 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to the diesel generator air intake pre-filters. The licensee entered this issue into their corrective action program as Action Request 301711.

The performance deficiency was more than minor because it affected 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. Using NRC IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," and IMC 0609, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve a loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event. The finding does not have a cross-cutting aspect because the performance deficiency occurred during system design using a different process than currently exists and was therefore not reflective of current performance.

Inspection Report# : [2014002](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Internal Flooding Design into Station Procedures

Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to translate the design of water resistant doors used to protect emergency core cooling rooms from internal flooding into procedures used to control those doors. This finding was entered into the licensee's corrective action program as Action Request AR 298068.

The performance deficiency was more than minor because it affected the procedure quality attribute of the mitigating systems cornerstone objective 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, this performance deficiency resulted in guidance to operators which would allow continuous operation outside of the design basis. The inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding is of very

low safety significance (Green) because: (1) the finding was not a deficiency affecting the design or qualification of a mitigating system; (2) the finding did not represent a loss of system and/or function; (3) the finding did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) the finding does 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 for greater than 24 hours. This finding had a cross-cutting aspect in the area of human performance associated with the decision making component because the licensee failed to verify the validity of the underlying assumptions used in the station's flooding analysis and failed to identify possible unintended consequences when making changes to the barrier impairment procedure [H.1(b)].

Inspection Report# : [2013005](#) (pdf)

Significance:  Nov 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Determine Cause for a Significant Condition Adverse to Quality

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to perform a cause evaluation for a significant condition adverse to quality. Specifically, the licensee failed to perform a cause evaluation for degraded and nonconforming conditions identified on the Division 1 critical switchgear air handling unit. The cumulative effect of these degraded and nonconforming conditions reduced the system heat removal capability below the performance requirements specified in station calculations. The licensee entered this issue into their corrective action program as Action Request AR 298179.

This performance deficiency was more than minor because, if left uncorrected, the failure to determine the cause and take corrective action to address air- and water-side fouling of safety-related room coolers could become a more significant safety concern. The inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because: (1) the finding was not a deficiency affecting the design or qualification of a mitigating system; (2) the finding did not represent a loss of system and/or function; (3) the finding did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) the finding does 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 for greater than 24 hours. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component in that the licensee failed to ensure appropriate supervisory and management oversight of work activities related to the screening of issues entered into the corrective action program [H.4(c)].

Inspection Report# : [2013010](#) (pdf)

Significance:  Nov 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Evaluate Operability of System Wide Anode Degradation in the Service Water System

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow Procedure PPM 1.3.66, "Operability and Functionality Evaluation," Revision 25-27. Specifically, the licensee failed to evaluate extent of condition and operability of components affected by sacrificial anode degradation in service-water-supplied air-to-water heat exchangers. The licensee entered this issue into their corrective action program as Action Request AR 290553.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective of ensuring the reliability of systems that respond to initiating events. The

inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because: (1) the finding was not a deficiency affecting the design or qualification of a mitigating system; (2) the finding did not represent a loss of system and/or function; (3) the finding did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) the finding does 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 for greater than 24 hours. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to periodically trend and assess information related to service water cooled heat exchangers in the aggregate to identify programmatic and common cause problems [P.1(b)].

Inspection Report# : [2013010](#) (*pdf*)

Significance: G Nov 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Adequate Testing of the Service Water Supplied Room Coolers

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to maintain an adequate test program that demonstrates safety-related room coolers will perform satisfactorily in service. Specifically, recent internal operating experience revealed that macro-fouling is not appropriately accounted for in the licensee's testing methodology which uses a representative cooler to demonstrate service water system performance. The licensee entered this issue into their corrective action program as Action Request AR 291981.

The performance deficiency was more than minor because it affected the procedure quality attribute of the Mitigating Systems Cornerstone objective and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because: (1) the finding was not a deficiency affecting the design or qualification of a mitigating system; (2) the finding did not represent a loss of system and/or function; (3) the finding did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) the finding does 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 for greater than 24 hours. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the operating experience component because the licensee failed to institutionalize operating experience involving macro-fouling of service water cooling coils through changes to station processes, procedures, and testing programs [P.2(b)].

Inspection Report# : [2013010](#) (*pdf*)

Significance: G Nov 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedures when Installing Roll-filters in Safety-related Air Handling Units

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, "Procedures," associated with the failure of the licensee to install roll-filters in safety-related room coolers in accordance with station procedures. Consequently, the roll-filter for the Division 1 critical switchgear air handling unit WMA-AH-53A was installed incorrectly which resulted in filter degradation and fouling of the air handling unit cooling coil. The licensee entered this issue into their corrective action program as Action Request AR 286069.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that the finding required a detailed risk evaluation because it represented a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time since the ventilation system supported several pieces of safety related equipment. The most limiting technical specification allowed completion time was just a few hours. A senior reactor analyst performed a risk evaluation. The analyst determined that, although potentially inoperable per the technical specifications definition, the ventilation fan remained functional and capable of performing for at least 24 hours the function credited in the licensee's probabilistic risk assessment. Therefore the finding is of very low safety significance (Green). This finding had a cross-cutting aspect in the area of human performance associated with the work practices components because the licensee failed to implement human error prevention techniques, such as holding pre-job briefings, self and peer checking, and proper documentation of activities when installing horizontal roll-filters in safety-related applications [H.4(a)].

Inspection Report# : [2013010](#) (*pdf*)

Significance:  Nov 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with Plant Technical Specifications for Control Room Air Conditioning System

The inspectors identified a non-cited violation of Technical Specification 3.7.4, "Control Room Air Conditioning (AC) System," involving the licensee's failure to adequately test and maintain the control room heating, ventilation, and air conditioning (HVAC) system. The licensee entered this issue into their corrective action program as Action Request AR 279768.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating System Cornerstone objective and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed the initial significance determination for the failure of the Division 1 control room air conditioning unit using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that the ventilation fan remained functional and capable of performing the probabilistic risk assessment function for at least 24 hours. Therefore the finding is of very low safety significance (Green). This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary. Specifically, the licensee failed to fully evaluate the existence of degraded sacrificial anodes in safety-related room coolers such that corrective actions to address these issues were implemented in a timely manner, commensurate with their significance [P.1(c)].

Inspection Report# : [2013010](#) (*pdf*)

Significance:  Sep 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Improperly Installed Jumper Results in Inoperable Remote Transfer Switch

The inspectors identified a non-cited violation of Technical Specification 3.3.3.2, "Remote Transfer System," involving the licensee's failure to remove a jumper in the 480 volt motor control center starter for residual heat removal suppression pool spray valve RHR-V-27B during planned replacement activities. The failure to remove the jumper rendered the remote transfer switch for valve RHR-V-27B inoperable for a period greater than allowed by the

station's technical specifications. This issue was entered into the licensee's corrective action program as Action Request AR 286816.

The performance deficiency was more than minor because it affected the protection from external events attribute of the Mitigating System Cornerstone objective and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process for (SDP) for Findings At-Power." Since the inoperable remote transfer switch potentially affected post-fire safe shutdown, the finding was evaluated using IMC 0609, Appendix F, Attachment 1, "Part 1: Application of Fire Protection SDP Phase 1 Worksheet." Using Attachment 1, Task 1.3.1, "Qualitative Screening for All Finding Categories," the inspectors determined that the finding was of very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions and did not affect the ability to achieve hot shutdown conditions. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance associated with the decision making component because operations personnel changed the postmaintenance testing for RHR-V-27B motor control center starter to a test that was incapable of detecting the improperly installed jumper [H.1(a)].

Inspection Report# : [2013004](#) (*pdf*)

Significance:  Aug 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Demonstrate Independence Requirements of IEEE 308-1974 for Divisions 1 and 2 Vital Instrumentation and Control Power Systems

Green. The team identified a Green non-cited violation of 10 CFR 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 August 22, 2013, the licensee failed to verify by either an analysis or test that the Class 1E inverters would continue to operate reliably when subjected to the effects of electrical faults that could be postulated to occur at non-Class 1E loads, due to a lack of seismic qualification of the loads, during and after a design basis loss-of-offsite power (LOOP) and seismic event. This violation was entered into the corrective actions program as Action Requests 291144 and 291248. Once identified, the licensee performed preliminary short circuit and coordination calculations during the inspection to provide reasonable assurance that the Class 1E fuses in the distribution to the non-Class 1E loads would operate within the first cycle of fault current.

The team determined that the failure to demonstrate conformance to the independence requirements of IEEE 308-1974 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 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 finding resulted in a condition where there was a reasonable doubt on the operability of the system. Using the NRC Manual Chapter 0609, Appendix A, Exhibit 4, the team determined a detailed risk evaluation was necessary because the finding involved the total loss of safety function that contributed to an external event initiated core damage accident sequence. Therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined, qualitatively, that the change to the core damage frequency would be less than 1E-7 per year (Green). Since the change to the core damage frequency was less than 1E-7 per year, the finding was not significant to the larger early release frequency. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

Significance: N/A Aug 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the FSAR for the Cleaning and Inspection Frequency of the Diesel Fuel Oil Storage Tanks

Green. The team identified a Severity Level IV non-cited violation of 10 CFR 50.71(e), which states, in part, that each person licensed to operate a nuclear power reactor shall update, periodically, the final safety analysis report originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information. Specifically, from May 2009 to August 22, 2013, the team identified that the diesel engine fuel oil storage tanks cleaning and inspection frequency was not updated in the final safety analysis report to include the latest information developed. This violation was entered into the licensee's corrective action program as Action Request 292360. The violation did not represent an immediate safety concern.

The licensee's failure to update the final safety analysis report to reflect the cleaning and inspection frequency of the diesel engine fuel oil storage tanks in Section 9.5.4.4 "Testing and Inspection Requirements" was a violation of the NRC requirements. The inspectors determined that this violation was also a performance deficiency. However, the inspectors determined that the performance deficiency was minor. The inspectors considered this issue to be within the traditional enforcement process because it had the potential to impact the NRC's ability to perform its regulatory oversight function. The inspectors used the NRC Enforcement Policy to evaluate the significance of this violation. The inspectors determined that the violation was a Severity Level IV because it was similar to an example provided in Section 6.1 of the NRC Enforcement Policy. The inspectors did not assign a cross-cutting aspect to this non cited violation because there was no finding associated with this traditional enforcement violation.

Inspection Report# : [2013007](#) (*pdf*)

Significance:  Aug 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze the Effect of System, Test Source, and Transient Harmonics on Proper Operation of Undervoltage Relays

Green. The team identified a Green non-cited violation of 10 CFR 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 calculation methods, or by the performance of a suitable testing program." Specifically, prior to August 22, 2013, the licensee failed to assess the cumulative effects of the 4160 Vac system, test source, and transient harmonics on the secondary level undervoltage relays. This violation was entered into the licensee's corrective action program as Action Requests 291665 and 292405. The violation did not present an immediate safety concern.

The licensee's failure to analyze the cumulative effect of electrical system, test source, and transient harmonics on the secondary level undervoltage relays 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 of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to analyze the cumulative effect of electrical harmonics on the secondary level undervoltage relays would have the potential to cause the relays to fail to actuate at the setpoints specified in technical specifications. Using the Manual Chapter 0609, Appendix A, Exhibit 2, the team determined the finding is of very low safety significance (Green), because the finding was confirmed to be a qualification deficiency that did not affect the functionality of the undervoltage relays. This finding did not have a crosscutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

Significance: G Aug 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Include ECCS Pumps' NPSH Limits in the Emergency Operating Procedures

Green. The team identified a Green non-cited violation of Technical Specification 5.4.1(b) which states, in part, "Written procedures shall be established, implemented, and maintained covering the following activities: The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33." Specifically, from 1997 to August 21, 2013, the licensee failed to revise emergency operating procedures for reactor pressure vessel control and primary containment control when it was determined that the required net positive suction head for the emergency core cooling pump were no longer bounded by the pumps vortex limits. This violation was entered into the corrective action program as Action Request 292153. On August 21, 2013, the licensee implemented a night order giving guidance to monitor the pumps for cavitation and take actions to prevent degraded operation until the procedures were revised.

The team determined that the failure to maintain emergency operating procedures which included appropriate net positive suction head limits in accordance with Technical Specification 5.4.1(b) was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the design control attribute of the Mitigating System 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 finding was more than minor because the procedures were in a condition that would adversely affect the licensee's response to an emergency. Using the Manual Chapter 0609, Appendix A, Exhibit 2, the team determined the finding represented a loss of safety system function; therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the bounding change to the core damage frequency was less than $1.8E-8$ per year (Green). Since the change in core damage frequency was less than $1E-7$ per year, the finding was not significant to the larger early release frequency. This finding did not have a crosscutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

Significance: G Aug 21, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct a Condition Adverse to Quality with Emergency Operating Procedures

Green. The team identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," which states, in part, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." Specifically, from August 16, 2013, to August 21, 2013, the licensee failed to implement a prompt compensatory corrective action to correct an adverse condition in emergency operating procedures that would have led to the loss of emergency core cooling pumps due to inadequate available net positive suction head. This violation was entered into the corrective action program as Action Request 292437. On August 21, 2013, the licensee implemented a night order giving guidance to monitor the pumps for cavitation and take actions to prevent degraded operation until the procedures are revised.

The team determined that the failure to implement an interim compensatory corrective action to promptly correct an adverse condition in emergency operating procedures in accordance with 10 CFR 50, Appendix B, Criterion XVI was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the design control attribute of the Mitigating System 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 finding was more than minor because the procedures were in a condition that would adversely affect the licensee's response to an emergency. Using the Manual Chapter 0609, Appendix A, Exhibit 2, the team determined the finding represented a loss of safety system function; therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the bounding change to the core damage frequency was less than $1.8E-8$ per year (Green). Since the change in core damage frequency was less than $1E-7$ per year, the finding was not significant to the larger early release frequency. The team determined that this finding has a crosscutting aspect in the area of problem identification and resolution, corrective action program, because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. [P.1(d)]

Inspection Report# : [2013007](#) (pdf)

Significance: G Aug 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Technical Basis for Assuming Turbulent Mixing of Diesel Combustion Air

Green. The team identified a Green non-cited violation of Title 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, from June 6, 1992, to August 20, 2013, the licensee failed to verify or check the adequacy of the design, by the use of alternate or simplified calculational methods, the technical basis that justified the dispersion of nitrogen in a tornado event to prevent loss of function of the emergency diesel generators. This violation was entered into the licensee's corrective action program as Action Request 292322. The violation did not represent an immediate safety concern.

The team determined that the failure to verify the adequacy of the technical basis that justified the dispersion of nitrogen in a tornado event 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 of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the functionality of the diesel generators was called into question for the failure to provide a technical basis for the effects of nitrogen leakage on the combustion air system. Using the Manual Chapter 0609, Appendix A, Exhibit 4, the inspectors determined a detailed risk evaluation was necessary because, during an external initiating event, the finding would degrade one or more trains of a system that supports a risk significant system or function; therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the change in core damage frequency was $1.2E-8$ per year (Green). Since the change in core damage frequency was less than $1E-7$ per year, the finding was not significant to the larger early release frequency. This finding did not have a crosscutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (pdf)

Significance: G Aug 07, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish Emergency Procedures for Filling and Venting Diesel Fuel Oil Tanks after Tornado Damage

Green. The team identified a Green non-cited violation of Technical Specification 5.4.1(a), "Procedures" which requires, "Written procedures shall be established, implemented, and maintained covering the following activities: (a) The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." From

April 4, 1984, to August 7, 2013, the licensee failed to establish procedures for filling and venting the emergency diesel generator fuel oil tanks after potential tornado damage. This violation was entered into the licensee's corrective action program as Action Request 291543. Subsequently, the licensee implemented Night Order 1477 to provide interim procedural guidance to operators prior to developing a formal emergency procedure.

The team determined that failure to establish procedures for filling and venting diesel engine fuel oil storage tanks after tornado damage in accordance with Technical Specification 5.4.1(a) was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the procedures attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the NRC Manual Chapter 0609, Appendix A, Exhibit 4, the inspectors determined a detailed risk evaluation was necessary because, during an external initiating event, the finding would degrade one or more trains of a system that supports a risk significant system or function; therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the change in core damage frequency was 1.2E-8 per year (Green). Since the change in core damage frequency was less than 1E-7 per year, the finding was not significant to the larger early release frequency. This finding had a crosscutting aspect in the area of problem identification and resolution, corrective action program component, because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. [P.1(d)]

Inspection Report# : [2013007](#) (pdf)

Significance: G Aug 06, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Support the Ability to Restore Class 1E Diesel Generator Standby Power and Recover from Station Blackout (SBO) Conditions

Green. The team identified a Green non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current Power," which states, in part, that each light-water-cooled nuclear power plant licensed to operate under this part must be able to withstand for a specified duration and recover from a station blackout as defined in § 50.2. Specifically, from June 8, 2013, to August 6, 2013, the licensee failed to demonstrate the ability to restore alternating current power and recover from a station blackout event when the licensee determined that the station battery voltage would be below the vendor minimum rated voltage to operate the diesel generator output breaker close coil. This violation was entered into the licensee's corrective action program as Action Request 291162. Subsequently, the licensee tested a spare 4160 Vac breaker, similar to the diesel generator output breaker, to provide reasonable assurance that the diesel generator breaker would close after the 4-hour coping period. The test results determined that the breaker would close reliably with less than the manufacturers rated voltage and within the capability of the battery.

The team determined that the failure to demonstrate the ability to restore emergency alternating current power to recover from a station blackout in accordance with 10 CFR 50.63 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 Mitigating Systems cornerstone and adversely affected cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding represented a reasonable question of functionality of the use of emergency diesel generators to recover from a station blackout. Using the NRC Manual Chapter 0609, Appendix A, Exhibit 2, the team determined the finding was of very low safety significance (Green), because the finding was confirmed to be a qualification deficiency that did not affect the functionality of the emergency diesel generators. The team determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, corrective action program component, because the licensee failed to implement a corrective action program with a low threshold for identifying issues. [P.1(a)]

Inspection Report# : [2013007](#) (*pdf*)

Significance:  Jul 12, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Programmatic Failure to Promptly Evaluate Safety Impact of Degraded Conditions

The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instruction, Procedures and Drawings.” This violation involved multiple examples of the licensee’s failure to follow station operability and functionality evaluation procedures, resulting in untimely and poorly documented operability and functionality determinations. The licensee documented the associated performance deficiency in its corrective action program as CR 289705 and took immediate actions to ensure operators understood and followed the timeliness requirements of PPM 1.3.66.

The failure to follow station operability procedures, which resulted in operability determinations not being timely performed, was a performance deficiency. This performance deficiency was more than minor because if left uncorrected, the continued failure to perform timely operability and functionality evaluations would have the potential to lead to a more significant safety concern. This finding was associated with the mitigating systems cornerstone. Using Inspection Manual Chapter 0609 Appendix A, Exhibit 2, the team determined the finding was of very low safety significance (Green) because the performance deficiency did not result in the loss of functionality of any structure, system, or component. The inspectors determined that this finding had a cross-cutting aspect in the work practices component of the human performance cross-cutting area because the licensee failed to define and effectively communicate expectations regarding compliance with PPM 1.3.66 (H.4.(b)).

Inspection Report# : [2013008](#) (*pdf*)

Significance:  Jul 12, 2013

Identified By: NRC

Item Type: FIN Finding

Failure to Classify Condition Reports in Accordance with Procedures

The team identified a Green finding involving six examples of the licensee’s failure to follow its corrective action program procedures. This resulted in condition reports not being appropriately prioritized in accordance with procedure SWP-CAP-06, “Condition Review Group (CRG),” revisions 18-20. The licensee entered this issue into its corrective action program as CR 289722.

The licensee’s condition review group’s failure to properly classify condition reports in accordance with SWP-CAP-06, “Condition Review Group (CRG),” revisions 18-20, was a performance deficiency. The performance deficiency was more than minor, because if left uncorrected, the failure to properly prioritize condition reports would have the potential to lead to a more significant safety concern because safety-significant conditions may not be promptly evaluated and addressed. This finding was associated with the mitigating systems cornerstone. Using Inspection Manual Chapter 0609 Appendix A, Exhibit 2, the team determined the finding was of very low safety significance (Green) because the performance deficiency did not result in the loss of functionality of any structure, system, or component. The team determined that this finding had a cross-cutting aspect in the decision-making component of the human performance cross-cutting area because the licensee failed to demonstrate that nuclear safety was an overriding priority by formally defining the authority and roles for decisions affecting nuclear safety and implementing those roles and authorities as designed when prioritizing condition reports (H.1(a)).

Inspection Report# : [2013008](#) (*pdf*)

Significance:  Jul 12, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Correct Environmental Qualification Deficiency

The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to promptly identify and correct a condition adverse to quality. Following discovery of non-environmentally qualified flow transmitters installed in the train A and C residual heat removal subsystems, licensee personnel failed to document the nonconforming condition in a condition report and failed to promptly restore the flow transmitters to an environmentally qualified state. No immediate actions were required to restore compliance—the licensee had replaced the nonconforming transmitters under Work Orders 01156960 and 01150424 on August 31, 2012, and September 12, 2012, respectively. The licensee entered this performance deficiency into its corrective action program as CR 289720.

The licensee’s failure to initiate a condition report for a non-conforming condition involving non-environmentally qualified flow transmitters installed in the train A and C residual heat removal subsystems was a performance deficiency. The performance deficiency was more than minor because it affected the design control attribute of the Mitigating Systems 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, Exhibit 2, the team determined the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of functionality. The inspectors determined that this finding had a cross-cutting aspect in the decision-making component of the human performance cross-cutting area because the licensee failed to demonstrate that nuclear safety was an overriding priority by using conservative assumptions when making decisions about non-conforming conditions (H.1(b)).

Inspection Report# : [2013008](#) (*pdf*)

Significance:  Jul 12, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control Inadequate Surveillance Procedure

The team identified a Green non-cited violation of Technical Specification 5.4.1.a for the licensee’s failure to follow its procedure-control procedure. Following discovery of an inadequate surveillance procedure for a high-pressure core spray instrument, the licensee failed to deactivate the procedure in accordance with its procedure-control procedure to prevent its use. This inadequate procedure was later implemented in the performance of a technical specification surveillance. The licensee entered this performance deficiency in its corrective action program as CR 288647. On July 9, 2013, the licensee placed the surveillance procedure on hold in accordance with the current revision of its procedure-control procedure.

The failure to deactivate an inadequate technical specification surveillance procedure in accordance with the licensee’s procedure-control procedure was a performance deficiency. The performance deficiency was more than minor because it affected the procedure quality attribute of the Mitigating Systems 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, Exhibit 2, the team determined the finding was of very low safety significance (Green) because there was no loss of operability or functionality as a result of the performance deficiency. The inspectors determined that this finding had a cross-cutting aspect in the corrective action program component of the problem identification and resolution cross-cutting area because the licensee failed to take appropriate corrective action to ensure that an issue potentially impacting nuclear safety was addressed in a timely manner, commensurate with its safety significance and complexity (P.1(d)).

Inspection Report# : [2013008](#) (pdf)

Significance: G Jul 12, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Procedure for Age Management of Electrolytic Capacitors

The team identified a green non-cited violation of Technical Specification 5.4.1.a, “Procedures,” for the licensee’s failure to implement its procedure for age management of electrolytic capacitors. The licensee had established the procedure in December 2011 to determine the age of electrolytic capacitors installed in critical applications and to identify or establish preventative maintenance tasks to monitor aging capacitors and to provide for their periodic replacement. As of July 2013, system engineers had not determined the age of electrolytic capacitors in their systems, identified existing preventative maintenance tasks that would include replacing the electrolytic capacitors, or established preventative maintenance tasks if none existed. The licensee entered the performance deficiency into its corrective action program as CR 288912.

The licensee’s failure to fully implement the requirements of its age management of electrolytic capacitors procedure was a performance deficiency. The performance deficiency was more than minor, because if left uncorrected, the failure to establish preventative maintenance schedules for critical electrolytic capacitors per procedure would have the potential to lead to a more significant safety concern. Specifically, the failure to manage age-related degradation of electrolytic capacitors could cause equipment containing electrolytic capacitors to fail, resulting in a plant transient or safety-related equipment being inoperable or unavailable. Using Inspection Manual Chapter 0609, Appendix A, Exhibit 2, the team determined the finding was of very low safety significance (Green) because there was no loss of operability or functionality as a result of the performance deficiency. The inspectors determined the finding had a cross-cutting aspect in the corrective action program component of the problem identification and resolution cross-cutting area because the licensee failed to take appropriate corrective action to ensure that an issue potentially impacting nuclear safety was addressed in a timely manner, commensurate with its safety significance and complexity (P.1(d)).

Inspection Report# : [2013008](#) (pdf)

Barrier Integrity

Significance: G Mar 23, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Operability Evaluation of Degraded Reactor Core Isolation Cooling Valve

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the failure of the licensee to perform a detailed examination of a degraded condition associated with the reactor core isolation cooling system in accordance with the station operability determination Procedure PPM 1.3.66, “Operability and Functionality Determinations,” Revision 29. For an immediate corrective action, the licensee reassessed the condition for operability.

The licensee entered this issue into their corrective action program as Action Request 303216.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding,

reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed an initial screening of the finding in accordance with NRC Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using NRC Manual Chapter 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because the finding represents only a degradation of the radiological barrier function provided for by the standby gas treatment system. This finding has a cross-cutting aspect in the area of human performance because the licensee rationalized the unexpected plant response when performing reactor core isolation cooling system surveillance testing and relied on previous, unrelated evaluations as justification of system operability instead of challenging the unknown.

Inspection Report# : [2014002](#) (pdf)

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Error in Control Room Boundary Breach Specification.

Green. The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion III, "Design Control," for the licensee's failure to translate the results of calculation NE-02-02-01, "Control Room Boundary Leakage Limitation" into allowed breach specifications for the control room ventilation boundary. Consequently, the specification used by operators in procedure PPM 1.3.57, "Barrier Impairment," Revision 29 for determining the operability of the control room envelope was non-conservative with respect to station calculations. This finding was entered into the licensee's corrective action program as Action Request AR 298914.

This performance deficiency was more than minor because it affected the design control attribute of the Barrier Integrity Cornerstone objective of providing reasonable assurance physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the non-conservative error inserted into control boundary leakage specifications resulted in periods where the maximum allowable control room breach size in station calculations was exceeded. The inspectors screened the finding in accordance with NRC Manual Chapter IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using IMC 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined this finding is of very low safety significance (Green) because the finding only represents a degradation of the radiological barrier function provided for by the control room. The finding did not have a cross-cutting aspect because the performance deficiency occurred in early 2010 using a different process than currently exists and was therefore not reflective of current performance.

Inspection Report# : [2013005](#) (pdf)

Significance: G Jun 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Corrective Action Program Procedures

Green. The inspectors identified two examples of a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow the corrective action program procedure by promptly entering conditions adverse to quality into the corrective action program. The first example occurred on March 16, 2013, when the reactor building exhaust air experienced a step reduction in flow due to a stack access door being inadvertently left open. The step change in reactor building exhaust air was not entered into the corrective action program until March 26, 2013. The second example occurred on May 20, 2013, during licensee inspections of reactor vessel internal components. During these licensee inspections, ultrasonic examinations identified cracking on the weld of the core shroud. The inspectors reviewed these inspections on June 3, 2013, and found that no condition reports had been initiated for the identified cracks. Procedurally, station personnel are required to initiate an action request condition report for any actual or suspected conditions adverse to quality no later than the end of shift. Following discussion with the inspectors, engineering personnel initiated action requests to address the

indications found on core shroud welds. The licensee initiated Action Requests AR 286688 and AR 287423 to address the timeliness issues involving condition report initiation.

The performance deficiency was more than minor, because if left uncorrected, the failure to follow procedures associated with the corrective action program could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power," the inspectors determined that the finding was associated with the Barrier Integrity cornerstone and was of very low safety significance because (1) the finding did not involve reactor coolant system pressurized thermal shock issues; (2) the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system or heat removal components; (3) the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment; and (4) the finding represented a degradation of the standby gas treatment system only in its radiological barrier function for secondary containment. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component, in that, the licensee failed to implement their program at a sufficiently low threshold. Consequently, the licensee failed to ensure the timely entry of conditions adverse to quality into the corrective action program as required by station procedures [P.1(a)] (Section 40A2).

Inspection Report# : [2013003](#) (*pdf*)

Significance:  Jun 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedures for Inoperable Control Room Ventilation Boundary Damper

Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," associated with the licensee's failure to follow station procedure PPM 1.3.57, "Barrier Impairments", Revision 29. On March 29, 2013, the inspectors walked down the main control room and noted that damper WEA-AD-51 had failed to move from an intermediate to its closed position. A review by the inspectors revealed that the licensee failed to enter the appropriate technical specification action statements as required by PPM 1.3.57 for the failed damper. Based on questions posed by the inspectors, the licensee took action to close and gag shut damper WEA-AD-51 on March 29, 2013. The licensee entered this issue into their corrective action program as Action Request AR 288508.

The performance deficiency was more than minor because it affected the configuration control attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed an initial screening of the finding in accordance with Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding to be of very low safety significance because it only represented a degradation of the radiological barrier function provided for the control room. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance associated with the resources component because the licensee failed to maintain complete, accurate and up-to-date design documentation. Specifically, Technical Memorandum TM-2082, "Control Room Envelope Boundary Control," Revision 5, contained out of date design information which caused station operators to not consider procedure PPM 1.3.57 applicable to damper WEA-AD-51 [H.2(c)] (Section 40A2).

Inspection Report# : [2013003](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

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

Miscellaneous

Significance: N/A Jun 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Obtain NRC Approval for Changes to Reactor Water Cleanup System Piping

Severity Level IV. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59, “Changes, Tests, and Experiments,” because the licensee failed to obtain a license amendment, pursuant to 10 CFR 50.90, prior to implementing a change to piping classification of the reactor water cleanup system. Specifically, through a 1995 revision to the Final Safety Analysis Report, the licensee changed the classification of reactor water cleanup system piping from ASME Section III, Class 3, to ANSI B31.1 without first obtaining NRC approval. The licensee initiated Action Request AR 282022 to address the incorrect downgrading of piping in the reactor water cleanup system.

The violation was evaluated using Section 2.2.4 of the NRC Enforcement Policy because the violation could impact the ability of the NRC to perform its regulatory oversight functions. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” the inspectors determined the finding was of very low safety significance because the finding did not result in exceeding the reactor coolant system leak rate for a small break loss of coolant accident and because the finding did not affect other systems used to mitigate a loss of coolant accident resulting in a total loss of function. Therefore, in accordance with Section 6.1.d of the NRC Enforcement Policy, the significance was determined to be Severity Level IV. This issue was entered into the licensee’s corrective action program as Action Request AR 282022. This violation did not have a cross-cutting aspect because it was strictly associated with a traditional enforcement violation (Section 1R15).

Inspection Report# : [2013003](#) (*pdf*)

Last modified : May 30, 2014