Calvert Cliffs 2
4Q/2012 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
2A Diesel Generator Ventilation Train 10 CFR 50.65 (a)(2) Performance Demonstration Not Met
An NRC-identified NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), was identified because Constellation personnel did not adequately demonstrate that the 2A diesel generator ventilation train (a)(2) performance was effectively controlled through performance of appropriate preventive maintenance. Specifically, Constellation personnel did not identify and properly account for a functional failure of the 2A emergency diesel generator (EDG) ventilation train in June 2012, and thereby did not recognize that the train exceeded its performance criteria and required a Maintenance Rule (a)(1) evaluation. The subsequent evaluation concluded that the 2A EDG ventilation train (a)(2) performance demonstration was no longer justified and therefore the train should be classified as (a)(1), corrective actions specified, and train monitoring completed. Constellation personnel entered the issue into their CAP as CR-2012-006132.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following a functional failure of the 2A EDG ventilation train in June 2012, Constellation did not identify that the train should be monitored in accordance with 10 CFR 50.65(a)(1) for establishing goals and monitoring against the goals. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power." The inspectors determined that this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency; did not represent a loss of safety system function; and did not screen as potentially risk significant due to external initiating events.

The finding has a cross-cutting aspect in the area of Problem Identification and Resolution because Constellation personnel did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary. This includes properly classifying, prioritizing, and evaluating for operability and reportabililty conditions adverse to quality. Specifically, Constellation personnel did not properly evaluate the impact of the condition of the dampers on the ability of the ventilation train to perform its safety function.
Inspection Report# : 2012004 *(pdf)*

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: FIN Finding
Corrective Actions Not Completed for Drains in the Intake Structure
An NRC-identified finding of very low safety significance was identified because Constellation staff did not follow Procedure CNG-CA-1.01-1000, "Corrective Action Program." Specifically, Constellation staff did not complete corrective actions previously prescribed within their Corrective Action Program as a result of root and apparent cause evaluations for drain failures which impacted safety-related equipment. This resulted in a drain line within the intake structure being clogged and the 21 saltwater (SW) pump becoming submerged in water. Constellation personnel entered the issue into their CAP as CR-2012-008363, cleaned out the drain line, and implemented a new preventive

maintenance (PM) schedule to keep the drain line clear. Planned corrective action includes overhauling the 21 SW pump bearings.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, because the intake structure drain piping was clogged, the 21 saltwater pump pit filled with water and caused the pump bearing housings to be contaminated with water, which adversely impacts the long-term reliability of the pump bearings and will cause the pump to be unavailable while the issue is corrected. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power." The inspectors determined that this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency; did not represent a loss of safety system function; and did not screen as potentially risk significant due to external initiating events.

The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution because Constellation personnel did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, Constellation personnel did not perform corrective actions previously prescribed to address and correct drain failures that impacted safety-related equipment.
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Testing Program for ESFAS SDS
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," because Constellation did not establish an operational test program for the engineered safety features actuation system (ESFAS) shutdown sequencers (SDSs). Specifically, on May 4, 2012, the inspectors determined that the licensee had never performed an operational test on the SDSs. The SDS supports the Loss of Offsite Power (LOOP) event in chapter 14 of the Updated Final Safety Analysis Report. Constellation's immediate corrective actions included entering the issue into their corrective action program (CAP), conducting an operability determination, developing a procedure to test the SDSs online, and testing the SDSs. Planned corrective actions include submittal of a license amendment request to include the SDS testing in their technical specification requirements.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, when tested, one of the SDSs did not perform as designed. The SDS logic for the No. 24 4kV bus initiated start of the auxiliary feedwater pump on the incorrect step. In addition, if left uncorrected the performance deficiency had the potential to lead to a more safety significant concern, in that, an SDS failure would go undetected until an actual demand during an LOOP. The inspectors evaluated the finding using Phase 1, "Initial Screening and Characterization," worksheet in Attachment 4 to IMC 0609, "Significance Determination Process," and determined the finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect in the area of problem identification and resolution, CAP, because Constellation did not identify this issue completely, accurately, and in a timely manner commensurate with its safety significance. Specifically, within the last 3 years, Constellation had several opportunities to completely and accurately identify the SDS test program deficiency as a result of multiple sequencer module replacements and through reviews of the emergency diesel generator testing program (P.1.a per IMC 0310).

Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 30, 2012

Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Maintain Adequate Procedures for Maintenance on Pressurizer Power-Operated Relief Valves
A self-revealing NCV of TS 5.4.1, “Administrative Controls – Procedures,” was identified for the failure to establish and maintain adequate procedures for performing maintenance on pressurizer power operated relief valves (PORVs). Specifically, the maintenance procedure (purchase order) did not clearly prescribe acceptance criteria for the minimum acceptable clearances between the cage, guide, and the main disc. This resulted in the as left internal valves clearances being less than the minimum expected requirements. During disassembly, the valve disc of one of the PORVs (serial number BS07325) was stuck and had to be mechanically removed. Immediate corrective actions included entering this issue into the corrective acttion program, conducting an operability determination for the valves currently installed on both units, and conducting a past operability review of the PORVs that were removed. Planned corrective actions include updating the design specification and maintenance procedures to ensure that minimum allowable internal clearances are specified.

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating System cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, when the valve was removed and disassembled, the valve disc was found stuck and had to be mechanically removed, thereby impacting the reliability and operability of the valve during operation at power the previous cycle. A detailed engineering analysis was performed which supported past operability of the valve. The inspectors evaluated the finding using Phase 1, “Initial Screening and Characterization,” worksheet in Attachment 4 to IMC 0609, “Significance Determination Process,” and determined the finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The finding has a cross-cutting aspect in the area of human performance, work practices, because personnel work practices did not support human performance. Specifically, Constellation did not ensure supervisory and management of oversight of work activities, including contractors, such that nuclear safety is supported. Critical dimensions affecting contractor work activities were not adequately captured in station processes, procedures, and work packages (H.4.c per IMC 0310).

Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 21, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of 10 CFR 50, Appendix B, Criterion III, Design Control - Inadequate Cooling to Containment Spray Pumps
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, “Design Control,” in that Constellation did not assure that design control measures verified or checked the adequacy of design of the containment spray (CS) pump cooling systems. Specifically, the team determined that the seal cooling units installed on the CS pumps would not provide sufficient cooling to the seals, and the team found that there were discrepancies in the installed configuration of the bearing cooling system for the pump; and no calculations or tests that demonstrated that adequate cooling was available for the pump bearings at design basis accident conditions. Following the identification of these issues, Constellation entered these issues into their corrective action program, and performed operability determinations on the cooling systems. The team’s review concluded that the systems were operable but degraded.

The finding was more than minor becasue 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. The team evaluated the finding in accordance with IMC 0609, Significance Determination Process, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) because it was

a design or qualification deficiency confirmed not to result in loss of operability or functionality. This finding did not have a cross-cutting aspect because the most significant contributor of the performance deficiency was not reflective of current licensee performance. (Section 1R21.2.1.1)
Inspection Report# : 2012007 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Test Program for Auxiliary Feedwater Emergency Air Accumulators
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," due to Constellation's failure to establish a test program to demonstrate that the auxiliary feedwater (AFW) air-operated valves (AOVs) will operate as design with the emergency air accumulators and associated air pressure control valves (PCVs). Specifically, on January 26, 2012, the inspectors identified that safety related AFW emergency PCVs were replaced without a functional post maintenance test (PMT). The inspectors also identified that the AFW emergency air system had not being tested since the emergency air accumulators were installed in the 1980s and the 1990s. Constellation immediate corrective actions included entering the issues in their corrective action program (CAP), performing a functional test of the installed PCVs, performing an operability determination for the AFW emergency air system, and developing a testing procedure to periodically verify operation of AFW AOVs using the emergency air system.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a reasonable doubt of operability existed because the capability of the AFW AOVs to operate using the backup air supply had not been demonstrated since original installation. In addition, if this issue was left uncorrected, it could have resulted in a greater safety concern because there was potential for build-up of particulate and condensation in the tight fits of the PCVs which could impact reliable operation. The inspectors determined that the finding is of very low safety significance because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect in the area of problem identification and resolution, CAP, because Constellation did not ensure that issues potentially impacting nuclear safety were promptly identified, fully evaluated, and actions were taken to address safety issues in a timely manner commensurate with their safety significance. Specifically, Constellation did not implement a CAP with a low threshold for identifying test control issues associated with the AFW system [P.1.(a) per IMC 0310]. (Section 1R19)
Inspection Report# : 2012002 *(pdf)*

Significance: G Mar 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Replace Batter Charger Circuit Board within Its Recommended Service Life
A self-revealing NCV of Technical Specification (TS) 5.4.1, "Procedures," was identified for the failure of Constellation to establish, implement, and maintain preventive maintenance (PM) requirements associated with the safety related No. 16 battery charger. Specifically, Constellation did not establish and implement a PM program to replace the current sensing/limiting printed circuit board (PCB) within its 10-year service life. As a consequence, the No. 16 battery charger failed rendering the 1A emergency diesel generator (EDG) inoperable. Constellation's immediate corrective actions included entering

this issue into their CAP, performing an apparent cause evaluation, performing an extent of condition review, and replacing the No. 16 battery charger PCBs.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capacity of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure of the No. 16 battery charger led to the 1A EDG being declared inoperable. The inspectors determined that the finding is of very low safety significance because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, Constellation did not maintain complete, accurate, and up-to-date procedures associated with the PM program [H.2.(c) per IMC 0310].
Inspection Report# : 2012002 *(pdf)*

Barrier Integrity

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: G Sep 30, 2012
Identified By: NRC

Item Type: NCV NonCited Violation

Inattentive Non-Licensed Operator

In accordance with Inspection Procedure 92702, "Followup on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders," the inspectors conducted a follow-up inspection of a Severity Level IV NCV which was identified due to the deliberate failure of a non-licensed operator to remain attentive to their duties while performing a maintenance evolution on the 2B EDG on June 15, 2011, contrary to Technical Specification 5.4.1.a, "Procedures." This issue was communicated to Constellation in a letter dated April 9, 2012, following the completion of an NRC investigation into this matter.

The inspectors reviewed the scope and depth of analysis performed in addressing the identified deficiency. The inspectors also reviewed Constellation's assessment of generic implications of the identified violation and evaluated the corrective actions implemented by Constellation personnel to determine whether they were adequate to address the identified deficiency and prevent recurrence. The inspectors reviewed Constellation's identified causes and the actions taken to prevent recurrence of those causes.

Inspection Report# : 2012004 *(pdf)*

Last modified : February 28, 2013