Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically

identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was

of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : April 01, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order

instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers

were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Last modified : April 01, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order

instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers

were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Last modified : March 29, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.

Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation

Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.

Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was

included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Last modified : March 28, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous

calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine

vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Last modified : March 28, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to

ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and

the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001

Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.

Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : March 27, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the

bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance:  Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance:  Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance:  May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance:  May 25, 2001
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the

degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance:  Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance:  May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance:  May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : March 26, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).

Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation

Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : March 01, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 30, 2001
Identified By: NRC
Item Type: FIN Finding
UFSAR Chapter 14 Single Failure Assumptions
The inspectors identified that the Updated Safety Analysis Report, Section 14.6, analysis for a loss of main feedwater did not assume a single failure of the auxiliary feedwater (AFW) system as specified in NUREG 0737, TMI Action Item II.E.1.1. This finding was of very low safety significance because the licensee's re-analysis demonstrated acceptable results by crediting operator action to increase AFW flow from the operating AFW pump.
Inspection Report# : 2001008*(pdf)*
Inspection Report# : 2002002*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001013*(pdf)*

Significance: G May 25, 2001
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.

The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited

violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use

the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC

Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : July 22, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating licensees to support refueling outages as senior operators limited to fuel handling.
The inspectors identified a Non-Cited Violation for failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating operator licenses to support refueling outages as senior operators limited to fuel handling (LSRO). This finding was determined to be more than minor but of very low safety significance. It is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, improper re-activation would result in improper training which could cause errors in fuel handling activities resulting in fuel damage and potential radiological releases. The SDP is entered because the performance deficiency is related to operator license conditions. The performance deficiency was determined to be of very low safety significance (green) because more than 20% of the LSRO license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). No refueling events have occurred due to this training deficiency.
Inspection Report# : 2002004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 30, 2001
Identified By: NRC
Item Type: FIN Finding
UFSAR Chapter 14 Single Failure Assumptions
The inspectors identified that the Updated Safety Analysis Report, Section 14.6, analysis for a loss of main feedwater did not assume a single failure of the auxiliary feedwater (AFW) system as specified in NUREG 0737, TMI Action Item II.E.1.1. This finding was of very low safety significance because the licensee's re-analysis demonstrated acceptable results by crediting operator action to increase AFW flow from the operating AFW pump.
Inspection Report# : 2001008*(pdf)*
Inspection Report# : 2002002*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump

turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*
Inspection Report# : 2001013*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since

there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: N/A May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level

trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," regarding the Unit 1 and 2 main steam line break accident analyses.
The inspectors identified a Non-Cited Violation for inadequate design control in associated with the Units 1 and 2 main steam line break (MSLB) accident analyses. The analyses credited the closure of the main feedwater isolation valves (MFIVs) to limit containment peak pressure even though in certain single failure scenarios, the valves may not fully close due to high differential pressure. This violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," Based on the example provided in NRC Manual Chapter 0612, Appendix E, Example 3.i, the above MFIV finding is more than minor because an error identified in an accident analysis assumption requires the accident analysis to be re-performed to assure accident analysis requirements are met. The MFIV finding was determined to be of very low safety significance (green) based on the fact that when the licensee revises their MSLB accident analyses to credit closure of the main feedwater regulating valves, it is likely to result in a net reduction in containment peak pressure.
Inspection Report# : 2002004*(pdf)*

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: W Jul 19, 2002
Identified By: NRC
Item Type: AV Apparent Violation
ANS was not capable of activating for 84 days in a timely manner.

The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offside ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSP) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial sire activitation (this activity supplements coverage provided by sire activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White). (Section 1EP2)
Inspection Report# : 2002010*(pdf)*

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and

subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to

workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Significance: W Jun 29, 2002
Identified By: NRC
Item Type: VIO Violation
Failure to prepare a shipment of radioactive material so as not to exceed the transportation radiation level limits of 49 CFR 173.441(a).
From an in-office review, the inspector identified an apparent finding of low to moderate safety significance. On May 23, 2002, the licensee failed to prepare a shipment of radioactive material to a waste processing facility in a manner such that, under conditions normally incident to transportation, the radiation level at any point on the external surface of the package would not exceed 200 millirem per hour, as specified by the Department of Transportation regulation 49 CFR 173.441(a). Upon arrival at the processing facility on May 24, 2002, the radiation dose rates, measured on portions of the external surface of the package were as high as 300 millirem per hour, which is in excess of the limits specified by the regulatory requirement. The failure to properly prepare the shipment in a manner to assure conformance with the requirements of 49 CFR 173.441(a) was determined to have low to moderate safety significance,

using the Public Radiation Safety Significance Determination Process. The finding involved the transportation of radioactive material in which an external radiation limit was exceeded, but was not greater than 5 times the regulatory limit.
Inspection Report# : 2002004*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : August 29, 2002

Calvert Cliffs 1

Initiating Events

Significance: N/A Jan 01, 2000
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection to review a Unit 1 white performance indicator for scrams with a loss of normal heat removal (LONHR).
The NRC identified that the licensee had not reviewed previous LONHR events in sufficient detail during common cause development resulting in some corrective actions that were too general in nature. Because of the lack of specificity, it was not evident that performance problems were sufficiently understood to provide reasonable assurance that the corrective actions will minimize the future scrams with a LONHR. In addition, corrective actions to address plant equipment problems known to contribute to post-scram LONHR events appear to have been unnecessarily delayed. Consequently, the licensee's corrective actions have not yet been sufficiently developed to allow the NRC to complete the inspection objective of providing assurance that the corrective actions are sufficient to address the causes of scrams with a LONHR events and to prevent recurrence. The loss of normal heat removal following a scram is more risk significant because it increases the potential for a more adverse consequences. Notwithstanding, the use of backup safety systems to compensate for the LONHR function is not a violation of regulatory requirements.
Inspection Report# : 2000010*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating licensees to support refueling outages as senior operators limited to fuel handling.
The inspectors identified a Non-Cited Violation for failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating operator licenses to support refueling outages as senior operators limited to fuel handling (LSRO). This finding was determined to be more than minor but of very low safety significance. It is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, improper re-activation would result in improper training which could cause errors in fuel handling activities resulting in fuel damage and potential radiological releases. The SDP is entered because the performance deficiency is related to operator license conditions. The performance deficiency was determined to be of very low safety significance (green) because more than 20% of the LSRO license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). No refueling events have occurred due to this training deficiency.
Inspection Report# : 2002004*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a condition adverse to quality on the 12 switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI
A non-cited violation of 10CFR50, Appendix B, Criterion XVI, was identified because the licensee failed to identify and correct a condition adverse to quality on the 12 switchgear ventilation train. On October 8, 2001, the licensee failed to write an issue report to document that when the failure of both the 11 and 12 switchgear refrigeration compressors

necessitated aligning the system in the fresh air mode, the 12 switchgear ventilation train was unable to maintain switchgear room temperature. When the inspector identified during a review of control room logs that no issue report had been written, the licensee wrote the issue report on October 24, 2001. No corrective action was taken by the licensee to investigate or correct the degraded condition until it repeated itself on October 27, 2001, when they found that misadjusted damper actuators resulted in 50% fresh air rather than 100%. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures would result in the failure of several safety significant mitigating systems. The finding was considered to be of very low safety significance, because following the failure of the 12 switchgear ventilation unit in the fresh air mode, the 11 switchgear ventilation train was placed in service and returned switchgear room temperature to normal.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear HVAC in accordance with 10CFR50, Appendix B, Criterion XVI.
A non-cited violation of 10CFR50, Appendix B, Criterion XVI was identified because the licensee failed to take timely and effective corrective action to mitigate excessive train unavailability for the switchgear ventilation system. The Unit 1 and Unit 2 switchgear ventilation systems have been classified maintenance rule (a)(1) since the fourth quarter of 1996, and the systems have exceeded maintenance rule performance criteria every quarter since 1996. Although the corrective action plan that has been in place since 1996 specified replacing the pneumatic controls, the fans, and the compressors, three fans and all four compressors have not yet been replaced. This issue has a credible impact on safety because the failure of the switchgear ventilation system to maintain switchgear room temperatures could result in the failure of safety related electrical busses in the switchgear room, as well as, the safety related equipment supplied by these busses. The finding was considered to be of very low safety significance, because the poor performance of this system has not resulted in switchgear room temperatures in excess of design limits.
Inspection Report# : 2001012*(pdf)*

Significance: G Sep 30, 2001
Identified By: NRC
Item Type: FIN Finding
UFSAR Chapter 14 Single Failure Assumptions
The inspectors identified that the Updated Safety Analysis Report, Section 14.6, analysis for a loss of main feedwater did not assume a single failure of the auxiliary feedwater (AFW) system as specified in NUREG 0737, TMI Action Item II.E.1.1. This finding was of very low safety significance because the licensee's re-analysis demonstrated acceptable results by crediting operator action to increase AFW flow from the operating AFW pump.
Inspection Report# : 2001008*(pdf)*
Inspection Report# : 2002002*(pdf)*

Significance: G Sep 14, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate abnormal operating procedures for post-fire safe shutdown. (Section 1RO5.07)
Contrary to 10 CFR 50, Appendix R, Section III.L.3, "Alternative and Dedicated Shutdown Capability: procedures AOP-9A and -9B (Unit 1) were inadequate in that they contained numerous deficiencies that presented challenges to the operators' ability to achieve and maintain safe shutdown.
Inspection Report# : 2001007*(pdf)*

Significance: G Sep 14, 2001

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to account for steam generator inventory losses due to blow down flow. (Section 1RO5.07).
Contrary to 10 CFR 50, Appendix B, Criteria III, "Design Control" design calculations and analysis for AOP-9 and loss of feedwater analysis were not adequater in that they failed to include inventory losses due to steam generatory blow down flow.
Inspection Report# : 2001007*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish measures to prevent damage or deterioration of oil used for make-up to safety related equipment.
The inspectors identified a Non-cited Violation for failure to establish measures to prevent damage or deterioration of make-up oil to safety related equipment. The inspectors observed visual debris in oil containers stored by operations personnel for make-up to safety related equipment. This is a violation of 10 CFR50 Appendix B, Criterion XIII, which requires, in part, measures be established to control the handling and storage of material to prevent damage or deterioration. This finding had a credible impact on safety, since visual debris in oil containers could have been transported into oil sumps and reservoirs associated with safety related equipment and degraded equipment performance. The issue affects the mitigating systems cornerstone since safety related mitigating equipment could be affected. However, since the debris was noted to be minor and localized at the bottom of the oil containers, and there is no indication of an actual loss of equipment as a result of contaminated make-up oil, this issue has been determined to have very low safety significance (Green) in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.

Inspection Report# : 2001013*(pdf)*

Significance: G Jul 13, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include acceptance criteria for critical bearing tolerances in work instructions used to reassemble the 11 AFW pump turbine bearings in March 2000.
The inspectors identified a Non-Cited Violation for failure to include appropriate quantitative and qualitative acceptance criteria in work instructions to ensure auxiliary feedwater pump turbine bearing reassembly was satisfactorily accomplished. Specifically, the maintenance order instructions for bearing reassembly after turbine overspeed tests did not include acceptance criteria for critical tolerances. This is a violation of 10 CFR 50 Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be prescribed by documented instructions, and these instructions shall include appropriate quantitative and qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The finding had a credible impact on safety, since maintaining turbine bearings within critical tolerances is required to ensure reliable operation of the turbine-driven AFW pumps. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat when main feedwater is unavailable. However, since bearing inspections of the 11 AFW pump turbine and turbine vibration trending do not indicate the bearing failed as a result of out of an out of tolerance condition, and the performance of the turbine bearings for the 12, 21 and 22 AFW pump turbines is satisfactory, this issue has been determined to have very low safety significance in accordance with the NRC SDP Phase 1 assessment.
Inspection Report# : 2001009*(pdf)*

Significance: Y Jul 13, 2001
Identified By: NRC
Item Type: VIO Violation
Violation of 10 CFR 50, Appendix B, Criterion V, regarding the application of sealant to the outboard turbine bearing to the 11 AFW pump, which contributed to it's May 16, 2001 failure.
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion V, which requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings. Contrary to this, on March 25, 2000, maintenance order instructions regarding the application of sealant to the 11 AFW pump turbine outboard bearing housing were not followed in that excessive sealant was applied, which most likely resulted in the bearing failure on May 16, 2001. This preliminary finding had a credible impact on safety, because the ability of a turbine-driven pump to perform its safety function was affected. This issue affects the mitigating cornerstone since AFW pumps supply feedwater to the steam generators to remove decay heat removal when main feedwater is unavailable. Using an SDP Phase 3 assessment, the issue has been characterized to have substantial safety significance (Yellow) based on the equipment function of removing decay heat and the length of time the excessive sealant was applied. (VIO 50-317/01-009-02; EA 01-206). Inspection report 50-317/01-009 presented the opportunity for the licensee to either request a regulatory conference to discuss their evaluation and any differences with the NRC evaluation, or to send the NRC their position in writing within 30 days. The licensee declined the opportunity and the final results of our SDP assessment and resulting violation were provided to the licensee in a letter dated September 19, 2001. While the licensee's investigation into the physical causes of the bearing failure was generally adequate, some weaknesses were observed. While these observations do not change the conclusions regarding the physical cause of the bearing failure, they are considered to be examples of weakness in the implementation of the corrective action program: (1) The quarantine of material found in the failed bearing and sump oil was less than effective, resulting in limited opportunity for confirmatory chemical analyses; (2) The potential for foreign material to enter the bearing from make-up oil added during daily operator rounds was not investigated until questioned during the inspection; (3) The licensee's conclusion that inadequate vendor technical manual direction led to the application of excessive sealant was not well supported by the results of the investigation; (4) Some missed opportunities to identify this problem prior to the bearing failure were identified.
Inspection Report# : 2001009*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly implement procedures related to recognizing that degraded components presented an operability concern, and to document the basis for continued operability.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion V, was identified due to a failure to assess and document the basis for continued system operability in accordance with plant procedures associated with (1) degraded safety related dampers in the Unit 2 switchgear ventilation system that did not function as designed, and (2) indicated temperatures greater than the design limit in the Unit 2 reactor cavity annulus since 1995. The risk associated with failing to assess and document the basis for continued operation with this degraded equipment was determined to be of very low safety significance since, the switchgear ventilation system continued to perform its function to cool the vital switchgear rooms and the dampers were subsequently repaired, and a subsequent operability evaluation completed by the licensee during the inspection determined that the concrete could withstand increased localized temperatures.
Inspection Report# : 2001003*(pdf)*

Significance: G May 25, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify an issue adverse to quality, and failure to take prompt corrective action for a significant condition adverse to quality.
A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, was identified due to (1) a failure to identify as a condition adverse to quality that the potential for air remaining after venting containment sump piping could result in degraded emergency core cooling system (ECCS) pump operation, and (2) a failure to correct in a timely manner a condition adverse to quality, identified via industry operating experience, regarding the potential for freezing in ECCS minimum recirculation flow piping. The risk associated with the potential for air remaining in the containment sump piping was determined to be of very low safety significance because an evaluation performed by the licensee during the inspection showed that ECCS pump operation would not be degraded. The risk associated with the potential for freezing in ECCS minimum recirculation flow piping line was determined to be of very low safety significance since there is no indication freezing has occurred in the recirculation line.
Inspection Report# : 2001003*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify of Safety Injection Tank Boron Concentration
Green. The inspectors identified a Non-cited Violation for failure to satisfy the technical specification surveillance requirement to verify boron concentration in each safety injection tank (SIT) every 31 days. This violation occurred due to an inadequate technical justification of an alternate method of verifying boron concentration. The safety significance of this finding was very low because subsequent SIT sampling determined that SIT boron concentrations remained within the technical specification required band. (Section 1R22)
Inspection Report# : 2000012*(pdf)*

Significance: G Feb 10, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design control associated with 4 KV breaker replacement.
Green. The inspectors identified two examples of a Non-cited Violation for inadequate design control. The first example involved the failure to ensure operability of the containment spray pump supply breaker following a test failure that occurred two days after a modification to the breaker. The second example involved the failure to ensure

proper operability of five similar, but normally closed, replacement load center feeder breakers. The first example was found to be of very low significance because the loss of containment spray function does not affect core damage frequency; Manual Chapter 0609, Appendix H, did not list containment spray as a system having major impact on large early release frequency; and at the time of the inspection the licensee had already initiated corrective actions to address the failure and to prevent recurrence. The second example was also of very low significance because the licensee's physical inspection of the switchgear indicated acceptable alignment between the breakers and their housing and between the racking block plate and the breaker front covers. If tripped as a result of a seismic event, the breakers could be closed manually by the operators. (Section 1R12).
Inspection Report# : 2000012*(pdf)*

Significance: G Dec 30, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
The failure to perform a complete channel calibration of the PORV actuation circuitry per TS SR 3.4.12.6.
The failure to perform a complete PORV actuation circuit channel calibration was determined to have more than minor significance because of the credible impact on safety in that the purpose of the periodic calibration is to verify PORV operability. This issue was determined to be of very low significance (Green) by the SDP because the Unit 1 RTDs were found to be within calibration and therefore operable. For Unit 2, previous calibration results demonstrate that the RTDs are generally not susceptible to drift. Further, schedule testing will verify Unit 2 RTDs are operable before the circuit is required to be in service and operable for LTOP protection. Reference LER 2000-003.00.
Inspection Report# : 2000011*(pdf)*

Significance: G May 13, 2000
Identified By: NRC
Item Type: FIN Finding
Degraded Protectowire fire detection system
GREEN. The inspectors identified degradation of the Protectowire fire detection system installed to detect overheated electrical cabling in the Unit 1 containment cable trays. The deficiencies included: the detection wire not being in the optimum serpentine design configuration; and, the protective covering for the Protectowire detection wires being damaged. The deficiencies were noted in both trains of electrical cable trays in the vicinity of the containment penetrations. The Protectowire fire detection system was degraded, but operable (Section 1R05).
Inspection Report# : 2000004*(pdf)*

Significance: G May 13, 2000
Identified By: Self Disclosing
Item Type: FIN Finding
1A emergency diesel generator failed PMT, due to improper lube oil sump level.
GREEN. During post-maintenance testing, the 1A emergency diesel generator (EDG) tripped on low oil sump level signal from the 1A2 engine (Section 1R19). An actual high level existed in the sump. Whipping of the oil by the crankshaft resulted in oil frothing in the sump and the sump level transmitter sensing lines. The oil frothing problem caused the sump level trip sensor to read lower than the actual level resulting in an EDG trip. The high oil sump level was caused by two problems: (1) incorrect guidance from the vendor (SACM) regarding the shutdown oil sump level band; and, (2) the 1A2 engine dipstick guidetube was aligned differently than the other engine's dipstick guidetube, resulting in actual sump level being higher than indicated. Since the low oil sump level is bypassed during a fast engine start, the 1A EDG would have started and ran given a safety injection actuation signal or an emergency bus undervoltage signal. However, if the engine was manually started to respond to a plant event, the low oil sump level trip would not have been bypassed and the EDG would have been expected to trip in the same manner experienced during the post-maintenance testing.
Inspection Report# : 2000004*(pdf)*

Significance: N/A May 13, 2000

Identified By: NRC
Item Type: FIN Finding
Protectowire degradation - cross-cutting issue, PI&R
NO COLOR. The degraded condition of the Protectowire fire protection feature (Section 1R05) was identified by the inspectors and was apparently caused when the fire detection system was not restored after being removed for work in the cable trays. BGE personnel could not specifically identify how long the condition had existed. Although testing is periodically conducted to verify the alarm function of the Protectowire fire detection system, no procedure or instruction exists to periodically verify that the detection wire remains installed in its design configuration.
Inspection Report# : 2000004*(pdf)*

Barrier Integrity

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," regarding the Unit 1 and 2 main steam line break accident analyses.
The inspectors identified a Non-Cited Violation for inadequate design control in associated with the Units 1 and 2 main steam line break (MSLB) accident analyses. The analyses credited the closure of the main feedwater isolation valves (MFIVs) to limit containment peak pressure even though in certain single failure scenarios, the valves may not fully close due to high differential pressure. This violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," Based on the example provided in NRC Manual Chapter 0612, Appendix E, Example 3.i, the above MFIV finding is more than minor because an error identified in an accident analysis assumption requires the accident analysis to be re-performed to assure accident analysis requirements are met. The MFIV finding was determined to be of very low safety significance (green) based on the fact that when the licensee revises their MSLB accident analyses to credit closure of the main feedwater regulating valves, it is likely to result in a net reduction in containment peak pressure.
Inspection Report# : 2002004*(pdf)*

Significance: G Mar 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations
GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7 CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atomospheric pressure control function of the reactor containment, this item was dtermind to be of very low safety signficance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited violation. (Section 1R14).
Inspection Report# : 2000006*(pdf)*

Emergency Preparedness

Significance: W Jul 19, 2002
Identified By: NRC

Item Type: AV Apparent Violation
ANS was not capable of activating for 84 days in a timely manner.
The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offside ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSP) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial sire activitation (this activity supplements coverage provided by sire activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White). (Section 1EP2)
Inspection Report# : 2002010*(pdf)*

Significance: G Aug 12, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Non-cited violation of offsite siren notification system surveillance testing requirements.
Green. The NRC identified that a violation of NRC requirements occurred in the area of offsite siren testing in that the quarterly offsite siren growl tests for identifying mechanical problems were inadequately conducted. This violation is being treated as a non-cited violation and was entered into the licensee's corrective action system (Section 1EP2).
Inspection Report# : 2000007*(pdf)*

Occupational Radiation Safety

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: FIN Finding
Failure to implement effective corrective actions for issues involving inadequate radiological evaluations to support work activities.
The licensee has not established effective problem resolution for recurring issues involviing failure to conduct adequate radiological surveys to support planning and conduct of radiological work activities. On July 13, 2001, the licensee failed to conduct adequate pre-job and ongoing radiological surveys to detect elevated levels of radioactive contamination within the No. 22 chemical and volume control system ion exchanger pit for work therein. This contributed to elevated airborne radioactivity and limited intakes of airborne radioactive material by workers during the work activities. The licensee's root cause analysis and NRC review identified that similar inadequate radiological surveys had been identified on previous events and that some of these problems were repeated during the event despite

the implementation of corrective actions. The failure to implement effective corrective actions is a cross-cutting issue determined to be more than minor.The issue was evaluated under the Occupational Radiation Safety significance determination process and determined to be a finding of very low safety significance. The issue was not an as-low-as-reasonably-achievable finding, did not involve an overexposure or substantial potential, and did not affect the ability to assess dose. The issue was included in the licensee's corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to implement 10 CFR71.87 regarding adherence to cask loading procedures.
10 CFR71.87 requires the licensee to load shipments of radioactive material in accordance with written procedures. On September 5, 2001, the licensee did not adhere to procedure RPS 2-231, for the loading of a Type B shipment of radioactive material. Specifically, the licensee did not ensure hardware compatibility ratings for hoisting operations and used a crane hook, rated to 6,000 pounds, to raise and transfer in air an approximately 7,000 pound container of waste containing approximately 91 curies of mixed radionuclides. The licensee identified the issue on November 6, 2001, and subsequently determined the hook had been load tested to 9,000 pounds. The licensee took various corrective and preventative actions and placed the issue into its corrective action process.
Inspection Report# : 2001012*(pdf)*

Significance: G Aug 11, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Licensee did not implement Technical Specification 5.4 and RG 1.33 during planning and repair of gasket for 22 CVCS IX.
On July 13, 2001, the licensee did not implement the requirements of Technical Specification 5.4 and RG 1.22, Rev. 2, February 1978 (Appendix A, Section 7e) during planning and repair of gasket on the No. 22 CVCS IS. As a result, the leaking gasket caused elevated contamination levels that were not identified and evaluated prior to the conduct of the work activity. The issues involving this event were addressed by various corrective action IRs (Nos. 072-016 and 045-460, 461, 462, 463, 464, 465, 466, 467, 468, 469 and 470). This issue is being treated as a Non-Cited Violation
Inspection Report# : 2001006*(pdf)*

Significance: G Aug 11, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Licensee did not follow maintenance work order.
A Non-Cited Violation of Technical Specification 5.4 was identified for failure to implement a maintenance work order for repair of the 22 Chemical Volume and Control System (CVCS) ion exchanger (IX) gasket on July 23, 2001. The licensee did not install and use the high efficiency particulate air (HEPA) filtering system, that was specified in the work order, and which was necessary to control the spread of radioactive contamination and reduce the potential airborne radioactivity concentrations during the work. This finding was greater than minor because the failure to use the HEPA filtering system that was specified for this work contributed to the unnecessary personnel exposure to airborne radioactivity. However, this issue did not constitute an As Low As Reasonably Achievable (ALARA) finding, did not result in a substantial potential for an overexposure, and did not affect the licensee's ability to assess dose to workers. Accordingly, this finding is considered as having very low safety significance. The Non-Cited Violation was entered into the licensee's corrective action program under Issue Report No. IR3-045-473. (Section 2OS1)
Inspection Report# : 2001006*(pdf)*

Significance: G Jun 30, 2001

Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to conduct an adequate radiological surveys of the Unit 2 reactor shroud. (Section 4OA7)
On May 3, 2001, the licensee did not conduct adequate radiological surveys, as required by 10 CFR 20.1501, to detect the presence of loose radioactive contamination, contained within the Unit 2 reactor shroud, prior to starting control element drive motor (CEDM) fans. Following the start of the fans, quantities of loose radioactive contamination were blown into the containment atmosphere from within the shroud area resulting in generation of elevated airborne radioactivity within containment, evacuation of workers from containment, and limited intakes of radioactive material by workers. No personnel overexposure occurred, no substantial potential for such an overexposure was apparent, and the licensee's ability to assess dose was not compromised. This matter was incorporated into the licensee's corrective action system on May 3, 2001, (Issue Report No. IR3-076-089).
Inspection Report# : 2001005*(pdf)*

Significance: G Apr 08, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement procedural requirements for transfer of contaminated waste bags.
The inspector identified a Non-Cited violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45 foot elevation of the spent fuel building. Additionally, routine surveys were not properly documented. This finding was of very low safety significance because the evolution did not result in an over exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers.
Inspection Report# : 2000009*(pdf)*

Public Radiation Safety

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Falure to fill & limit contents of shipment radio active material to waste processing facility 7/11/02 in accord. with DOT 49 CFR 173.24(b)(2), specified by 10 CFR 71.5, Transp. of Lic. Material".
The inspector conducted an in-office review of the circumstances involving a shipment containing radioactive materials made on July 11, 2002, (Shipment No. 02-065) from Constellation Generation's Calvert Cliffs Nuclear Power Plant to a waste processing vendor facility in Oak Ridge, Tennessee. The review included examination of the Constellation Generation's performance relative to the preparation of the shipment. Based on an in-office review, the inspector identified a finding having very low safety significance that resulted in a non-cited violation of 10 CFR 71.5, "Transportation of Licensed Material", which requires compliance with the applicable requirements of Department of Transportation regulations 49 CFR, Parts 170 through 189. Specifically, on July 11, 2002, Constnellation Generation (Calvert Cliffs Nuclear Power Station) shipped a container of radioactive materials that was not prepared in accordance with 49 CFR 173.24, "General requirements for and packages", sufficient to preclude a substantial reduction in the effectiveness of the package, under conditions normally incident to transportation. Consequently, when received at the intended destination on July 12, 2002, a small hole (about 1 onch by 2 inches) was found in the side of the container, with a small portion of a metal object protruding through the hole. On July 11, 2002, Constellation Generation shipped a Sealand box trailer (package) containing radioactive waste materials from its Calvert Cliffs facility to a vendor facility in Oak Ridge Tennessee for processing. The shipment (02-065) consisted primarily of structurla steel with some bagged waste filters and was shipped as exclusive use, low specific activity (LSA). The total weight of the package, including its contents, was 31,650 pounds, The maxium design weight for the package and contents is 44,800 pounds. The total activity was 5.9 millicuries of solid/metal mixed oxides. The material was to be braced during filling. However, the package was shipped from Calvert Cliffs Nuclear Power Station without bracing of the contents. A radiation and contamination survey and inspection of the exterior of the package was performed by Constellation

Generation prior to shipping. On arrival at the vendor's processing facility on July 12, 2002, the shipment was inspection and a receipt radiation and contamination survey was performed by the vendor. The inspection identified an approximately one inch by two inch breach (hole) in the 20 foot Sealand container near the top of the right upper-side of the container. A portion of a steel object was protruding about one-half inch through the side of the package. The receipt radiation and contamination surveys did not identify any elevated radiation levels or contamination on the exposed portion of the protruding metal or on the exterior or interior of the package. There was no evidence that any of the contents of the package were lost. The vendor informed Constellation Generation of this condition on July 12, 2002. Constellation Generation documented this issue in its corrective action program was Issue Report IR3-065-680. They also initiated immediate actions to preclude recurrence, including stopping all radioactive material shipments from the station until corrective actions could be put into place. Since this violation of 10 CFR 71.5 is of very low safety significance and Constellation Generation entered the finding into its corrective action program, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy issued May 1, 2000.
Inspection Report# : 2002005*(pdf)*

Significance: W Jun 29, 2002
Identified By: NRC
Item Type: VIO Violation
Failure to prepare a shipment of radioactive material so as not to exceed the transportation radiation level limits of 49 CFR 173.441(a).
From an in-office review, the inspector identified an apparent finding of low to moderate safety significance. On May 23, 2002, the licensee failed to prepare a shipment of radioactive material to a waste processing facility in a manner such that, under conditions normally incident to transportation, the radiation level at any point on the external surface of the package would not exceed 200 millirem per hour, as specified by the Department of Transportation regulation 49 CFR 173.441(a). Upon arrival at the processing facility on May 24, 2002, the radiation dose rates, measured on portions of the external surface of the package were as high as 300 millirem per hour, which is in excess of the limits specified by the regulatory requirement. The failure to properly prepare the shipment in a manner to assure conformance with the requirements of 49 CFR 173.441(a) was determined to have low to moderate safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved the transportation of radioactive material in which an external radiation limit was exceeded, but was not greater than 5 times the regulatory limit.
Inspection Report# : 2002004*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A May 25, 2001
Identified By: NRC
Item Type: FIN Finding
Performance in the area of Problem Identification and Resolution is generally adequate.
The inspectors determined that the licensee's performance in the area of problem identification and resolution at the Calvert Cliffs site was generally adequate. The Calvert Cliff's staff identified risk significant problems at an appropriate threshold, and the problems were classified at the appropriate significance level. Root cause evaluations were consistent with the significance of the problem, and corrective actions were associated with the cause of the problem. The engineering and maintenance backlogs, as well as the corrective action backlog, appeared to be adequately managed. The results of the licensee's audits and self-assessments were appropriately considered for entry into the corrective action program. Notwithstanding, the inspectors identified examples of a failure to identify and correct problems associated with emergency core cooling piping. Additionally, the inspectors identified examples of a failure

to assess and document the basis for continued operability in accordance with plant procedures; these were associated with degraded switchgear ventilation dampers and increased temperatures in the reactor cavity annulus.
Inspection Report# : 2001003*(pdf)*

Significance: N/A May 26, 2000
Identified By: NRC
Item Type: FIN Finding
BG&E personnel effectively identified, entered, prioritized, and evaluated problems at Calvert Cliffs
In general, BG&E personnel effectively identified, entered, prioritized, and evaluated problems at the Calvert Cliffs station in accordance with their established corrective action program guidance. The team identified several minor deficiencies associated with problem identification and evaluation, although the total number of these issues were low. The inspection team also determined that BG&E's implementation of individiual corrective actions was appropriate. Nuclear performance assessment department audits were thorough and providied good independent oversight of plant activities.
Inspection Report# : 2000005*(pdf)*

Last modified : December 02, 2002

Calvert Cliffs 1

Initiating Events

Significance: G Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to take adequate corrective actions for poor quality welds on reactor coolant pump support systems
CEG did not adequately complete identified corrective actions in response to a weld deficiency in the component cooling water (CCW) line to a Unit 2 reactor coolant pump (RCP) in October 2001. The incomplete corrective actions, due to missed inspections of some welds in the RCP support systems, contributed to a failed weld in a lube oil line to a RCP and a Unit 1 reactor trip in July 2002.
Inspection Report# : 2002012*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating licensees to support refueling outages as senior operators limited to fuel handling.
The inspectors identified a Non-Cited Violation for failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating operator licenses to support refueling outages as senior operators limited to fuel handling (LSRO). This finding was determined to be more than minor but of very low safety significance. It is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, improper re-activation would result in improper training which could cause errors in fuel handling activities resulting in fuel damage and potential radiological releases. The SDP is entered because the performance deficiency is related to operator license conditions. The performance deficiency was determined to be of very low safety significance (green) because more than 20% of the LSRO license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). No refueling events have occurred due to this training deficiency.
Inspection Report# : 2002004*(pdf)*

Barrier Integrity

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," regarding the Unit 1 and 2 main steam line break accident analyses.
The inspectors identified a Non-Cited Violation for inadequate design control associated with the Units 1 and 2 main steam line break (MSLB) accident analyses. The analyses credited the closure of the main feedwater isolation valves (MFIVs) to limit containment peak pressure even though in certain single failure scenarios, the valves may not fully close due to high differential pressure. This violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control,"

is based on the example provided in NRC Manual Chapter 0612, Appendix E, Example 3.i. The above MFIV finding is more than minor because an error identified in an accident analysis assumption requires the accident analysis to be re-performed to assure accident analysis requirements are met. The MFIV finding was determined to be of very low safety significance (green) based on the fact that when the licensee revises their MSLB accident analyses to credit closure of the main feedwater regulating valves, it is likely to result in a net reduction in containment peak pressure.
Inspection Report# : 2002004*(pdf)*

Emergency Preparedness

Significance: W Jul 19, 2002
Identified By: NRC
Item Type: VIO Violation
ANS was not capable of activating for 84 days in a timely manner.
The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offsite ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSPS) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial siren activitation (this activity supplements coverage provided by siren activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White).
Inspection Report# : 2002010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to fill & limit contents of shipment of radioactive material to waste processing facility on 7/11/02 in accord with DOT 49 CFR 173.24(b)(2), specified by 10 CFR 71.5, Transp of Lic Material.

From an in-office review, the inspector identified a Non-Cited Violation of 10 CFR 71.5. On July 11, 2002, Constellation Generation's Calvert Cliffs Nuclear Power Plant failed to properly fill and limit the contents of a package of hazardous material (i.e., radioactive material) such that, under conditions normally incident to transportation, the effectiveness of the package would not be substantially reduced, as specified by the Department of Transportation's (DOT) regulation, 49 CFR 173.24(b)(2). On arrival at the processing facility on July 12, 2002, a piece of metal, from the shipment of radioactive material, was found to be protruding from the package. Constellation Generation's failure to fill and limit the contents of the package to preclude a substantial reduction in the effectiveness of the package to ensure conformance with the requirements of 49 CFR 173.24(b)(2) was determined to have very low safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved a breach of a package containing less than a Type A quantity of radioactive material during transit but did not involve a loss of containment of the radioactive material. Although the package was breached and contained contaminated material, the piece of metal protruding from the package was not contaminated with radioactive material.

Inspection Report# : 2002005*(pdf)*

Significance: W Jun 29, 2002

Identified By: NRC

Item Type: VIO Violation

Failure to prepare a shipment of radioactive material so as not to exceed the transportation radiation level limits of 49 CFR 173.441(a).

From an in-office review, the inspector identified an apparent finding of low to moderate safety significance. On May 23, 2002, the licensee failed to prepare a shipment of radioactive material to a waste processing facility in a manner such that, under conditions normally incident to transportation, the radiation level at any point on the external surface of the package would not exceed 200 millirem per hour, as specified by the Department of Transportation regulation 49 CFR 173.441(a). Upon arrival at the processing facility on May 24, 2002, the radiation dose rates, measured on portions of the external surface of the package were as high as 300 millirem per hour, which is in excess of the limits specified by the regulatory requirement. The failure to properly prepare the shipment in a manner to assure conformance with the requirements of 49 CFR 173.441(a) was determined to have low to moderate safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved the transportation of radioactive material in which an external radiation limit was exceeded, but was not greater than 5 times the regulatory limit. A supplemental inspection was performed by the NRC to assess the licensee's evaluations and corrective actions associated with a finding of low to moderate safety significance (WHITE) involving failure to properly prepare a shipment of Class 7 (radioactive) materials for shipment, on May 23, 2002, to a vendor waste processing facility located in Oak Ridge, Tennessee. The inspection was conducted in accodance with NRC Inspection Procedure 95001, "Inspection For One or Two White Inputs in a Strategic Performance Area." This performance issue was preliminarily determined to be WHITE, in NRC Inspection Report 05000317-02-04, 05000318-02-04, dated July 30, 2002. The licensee did not contest the characterization of the finding and no Regulatory Conference was held. The issue received final characterization as a WHITE finding in an August 29, 2002, NRC letter to the licensee. The licensee provided its response to the WHITE finding, and associated violation, in letter dated September 17, 2002. The inspection determined that the licensee performed an evaluation of the issue, identified root and contributing causes, and identified and implemented immediate and compensatory corrective actions to address these causes and prevent recurrence. Notwithstanding, it was not apparent that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to prevent recurrence. Specifically, multiple examples were identified where packaged radioactive materials were not properly stabilized resulting in noncomformance with applicable shipping regulations. The corrective actions taken and planned do not appear to provide assurance that the specific performance deficiency was corrected or that actions on broader issues (e.g., program procedures, human performance, or oversight activities) were sufficient to preclude recurrence of material packaging and stabilization concerns. Consequently, the inspection objectives outlined in the NRC Inspection Procedure 95001 could not be achieved. Further, and consistent with the guidance contained in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program", this issue will remain open and will not be removed from the Action Matrix pending additional NRC inspection. A supplemental inspection was performed by the NRC to assess Constellation Generation's evaluations and corrective actions associated with a WHITE finding involving identification of elevated radiation dose rates on a package of radioactive material shipped from the Calvert

Cliffs facility on May 23, 2002, to a waste processing facility. (Reference EA-02-138, NRC Report No. 50-317/02-04; 50-318/02-04, dated August 19, 2002). A previous supplemental inspection, conducted in October 2002, to assure that the causes of the performance issues associated with this finding were understood, the extent of condition had been identified, and that corrective actions were sufficient to prevent recurrence, was unable to assure that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to address the issues as required by the inspection objectives outlined in NRC Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." (Reference NRC Inspection Report No. 50-317/02-011; 50-318/02-011, dated November 7, 2002). The current inspection identified that Constellation Generation conducted a detailed Collective Significance Analysis of this matter, identified root and contributing causes, and identified and implemented corrective actions to address these causes and prevent recurrence. The inspection also identified actions had been taken to improve the corrective action process including root cause analyses. Consistent with NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this issue will only be considered in assessing plant performance for a total of four quarters from the date when the issue was identified (May 28, 2002).
Inspection Report# : 2002004*(pdf)*
Inspection Report# : 2002006*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Based on the sample selected for review, the PI&R team concluded that implementation of the corrective action program was adequate.
Based on the sample selected for review, the team concluded that the implementation of the Constellation Energy Group (CEG) corrective action program was adequate. In general, personnel identified problems and entered them into the corrective action program at an appropriate threshold. However, the team identified several minor valve packing and pump seal leaks within the Unit 1 and Unit 2 emergency core cooling system (ECCS) pump rooms that were not identified and captured in CEG's corrective action program. CEG generally prioritized and completed evaluations in a timely fashion and evaluated problems in adequate detail commensurate with the safety significance. The evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. The evaluations of equipment problems generally included operability assessments of sufficient depth to conclude that equipment remained capable of performing its safety functions. CEG also assessed reportability requirements appropriately. CEG corrective actions and improvement initiatives were generally effective in improving equipment reliability and human performance. However, inadequate corrective action follow through for a Unit 2 reactor coolant pump (RCP) support system weld deficiency contributed to a Unit 1 reactor trip. The team also noted that CEG was not fully effective in resolving some recurrent equipment deficiencies. CEG's self-assessments and corrective action program audits identified similar findings.
Inspection Report# : 2002012*(pdf)*

Last modified : March 25, 2003

Calvert Cliffs 1
1Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to take adequate corrective actions for poor quality welds on reactor coolant pump support systems
CEG did not adequately complete identified corrective actions in response to a weld deficiency in the component cooling water (CCW) line to a Unit 2 reactor coolant pump (RCP) in October 2001. The incomplete corrective actions, due to missed inspections of some welds in the RCP support systems, contributed to a failed weld in a lube oil line to a RCP and a Unit 1 reactor trip in July 2002.
Inspection Report# : 2002012*(pdf)*

Mitigating Systems

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely & inadequate corr. actions to prevent 4kV breaker auxiliary switch failure. The condition review for SBM switches used in other applications have been inadquate and incompl. since 1996.
A self-revealing NCV was documented regarding CCNP's inadequate and untimely corrective actions to prevent recurrence of SBM-type auxiliary swithc failure as required by 10 CFR 50, Appendix B, Criteria XVI, "Corrective Action". The finding is considered a PI&R cross-cutting issue due to the failure to prevent recurrent SBM-type switch failures and due to inadequate and incomplete extent of condition reviews since CCNPP's review of industry operating experience regarding degraded and defective GE SBM switches in 1996. The inspectors determined that this event was more than minor because the finding represented an actual loss of the safety function, for 28 days, for the 1B EDG to be capable of providing emergency electrical power to the 14 4kV vital emergency bus. The safety significance of this finding was very low because of a plant design feature that allows the Unit 2 motor driven auxiliary feedwater pump to supply the Unit 1 steam generators during a station blackout (no AC power) at Unit 1. (Section 40A3). '
Inspection Report# : 2003002*(pdf)*

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating licensees to support refueling outages as senior operators limited to fuel handling.
The inspectors identified a Non-Cited Violation for failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating operator licenses to support refueling outages as senior operators limited to fuel handling (LSRO). This

finding was determined to be more than minor but of very low safety significance. It is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, improper re-activation would result in improper training which could cause errors in fuel handling activities resulting in fuel damage and potential radiological releases. The SDP is entered because the performance deficiency is related to operator license conditions. The performance deficiency was determined to be of very low safety significance (green) because more than 20% of the LSRO license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). No refueling events have occurred due to this training deficiency.
Inspection Report# : 2002004*(pdf)*

Barrier Integrity

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," regarding the Unit 1 and 2 main steam line break accident analyses.
The inspectors identified a Non-Cited Violation for inadequate design control associated with the Units 1 and 2 main steam line break (MSLB) accident analyses. The analyses credited the closure of the main feedwater isolation valves (MFIVs) to limit containment peak pressure even though in certain single failure scenarios, the valves may not fully close due to high differential pressure. This violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," is based on the example provided in NRC Manual Chapter 0612, Appendix E, Example 3.i. The above MFIV finding is more than minor because an error identified in an accident analysis assumption requires the accident analysis to be re-performed to assure accident analysis requirements are met. The MFIV finding was determined to be of very low safety significance (green) based on the fact that when the licensee revises their MSLB accident analyses to credit closure of the main feedwater regulating valves, it is likely to result in a net reduction in containment peak pressure.
Inspection Report# : 2002004*(pdf)*

Emergency Preparedness

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
EAL initiating conditions caused delays in declar. approp. emerg. classifi. during simulator as a drill. The EALS & Oper. procedures in lieu of plant conditions alone contributed to this issue.
The inspectors identified a finding that the CCNPP emergency action level (EAL) initiating conditions, as written, caused delays and an incorrect emergency classification declaration during a simulator scenario evaluated as a drill. A contributing cause of this finding was that the content of CCNPP's EALs incorporated plant conditions and operator implementation of procedures as initiating conditions in lieu of using plant conditions alone as the EAL initiating conditions. This issue was determined to be more than minor because if left uncorected it could become a more significant safety concern regarding the potential untimely public notification of an emergency. This finding was classified as Green (of very low safety significance) after NRC management review since the Emergency Preparedness (EP) Significance Determination Process (SDP) did not apply. (Section 1EP6)
Inspection Report# : 2003002*(pdf)*

Significance: W Jul 19, 2002
Identified By: NRC
Item Type: VIO Violation
ANS was not capable of activating for 84 days in a timely manner.
The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offsite ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSPS) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial siren activitation (this activity supplements coverage provided by siren activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White).
Inspection Report# : 2002010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fill & limit contents of shipment of radioactive material to waste processing facility on 7/11/02 in accord with DOT 49 CFR 173.24(b)(2), specified by 10 CFR 71.5, Transp of Lic Material.
From an in-office review, the inspector identified a Non-Cited Violation of 10 CFR 71.5. On July 11, 2002, Constellation Generation's Calvert Cliffs Nuclear Power Plant failed to properly fill and limit the contents of a package of hazardous material (i.e., radioactive material) such that, under conditions normally incident to transportation, the effectiveness of the package would not be substantially reduced, as specified by the Department of Transportation's (DOT) regulation, 49 CFR 173.24(b)(2). On arrival at the processing facility on July 12, 2002, a piece of metal, from

the shipment of radioactive material, was found to be protruding from the package. Constellation Generation's failure to fill and limit the contents of the package to preclude a substantial reduction in the effectiveness of the package to ensure conformance with the requirements of 49 CFR 173.24(b)(2) was determined to have very low safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved a breach of a package containing less than a Type A quantity of radioactive material during transit but did not involve a loss of containment of the radioactive material. Although the package was breached and contained contaminated material, the piece of metal protruding from the package was not contaminated with radioactive material.
Inspection Report# : 2002005*(pdf)*

Significance: W Jun 29, 2002
Identified By: NRC
Item Type: VIO Violation
Failure to prepare a shipment of radioactive material so as not to exceed the transportation radiation level limits of 49 CFR 173.441(a).
From an in-office review, the inspector identified an apparent finding of low to moderate safety significance. On May 23, 2002, the licensee failed to prepare a shipment of radioactive material to a waste processing facility in a manner such that, under conditions normally incident to transportation, the radiation level at any point on the external surface of the package would not exceed 200 millirem per hour, as specified by the Department of Transportation regulation 49 CFR 173.441(a). Upon arrival at the processing facility on May 24, 2002, the radiation dose rates, measured on portions of the external surface of the package were as high as 300 millirem per hour, which is in excess of the limits specified by the regulatory requirement. The failure to properly prepare the shipment in a manner to assure conformance with the requirements of 49 CFR 173.441(a) was determined to have low to moderate safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved the transportation of radioactive material in which an external radiation limit was exceeded, but was not greater than 5 times the regulatory limit. A supplemental inspection was performed by the NRC to assess the licensee's evaluations and corrective actions associated with a finding of low to moderate safety significance (WHITE) involving failure to properly prepare a shipment of Class 7 (radioactive) materials for shipment, on May 23, 2002, to a vendor waste processing facility located in Oak Ridge, Tennessee. The inspection was conducted in accodance with NRC Inspection Procedure 95001, "Inspection For One or Two White Inputs in a Strategic Performance Area." This performance issue was preliminarily determined to be WHITE, in NRC Inspection Report 05000317-02-04, 05000318-02-04, dated July 30, 2002. The licensee did not contest the characterization of the finding and no Regulatory Conference was held. The issue received final characterization as a WHITE finding in an August 29, 2002, NRC letter to the licensee. The licensee provided its response to the WHITE finding, and associated violation, in letter dated September 17, 2002. The inspection determined that the licensee performed an evaluation of the issue, identified root and contributing causes, and identified and implemented immediate and compensatory corrective actions to address these causes and prevent recurrence. Notwithstanding, it was not apparent that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to prevent recurrence. Specifically, multiple examples were identified where packaged radioactive materials were not properly stabilized resulting in noncomformance with applicable shipping regulations. The corrective actions taken and planned do not appear to provide assurance that the specific performance deficiency was corrected or that actions on broader issues (e.g., program procedures, human performance, or oversight activities) were sufficient to preclude recurrence of material packaging and stabilization concerns. Consequently, the inspection objectives outlined in the NRC Inspection Procedure 95001 could not be achieved. Further, and consistent with the guidance contained in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program", this issue will remain open and will not be removed from the Action Matrix pending additional NRC inspection. A supplemental inspection was performed by the NRC to assess Constellation Generation's evaluations and corrective actions associated with a WHITE finding involving identification of elevated radiation dose rates on a package of radioactive material shipped from the Calvert Cliffs facility on May 23, 2002, to a waste processing facility. (Reference EA-02-138, NRC Report No. 50-317/02-04; 50-318/02-04, dated August 19, 2002). A previous supplemental inspection, conducted in October 2002, to assure that the causes of the performance issues associated with this finding were understood, the extent of condition had been

identified, and that corrective actions were sufficient to prevent recurrence, was unable to assure that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to address the issues as required by the inspection objectives outlined in NRC Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." (Reference NRC Inspection Report No. 50-317/02-011; 50-318/02-011, dated November 7, 2002). The current inspection identified that Constellation Generation conducted a detailed Collective Significance Analysis of this matter, identified root and contributing causes, and identified and implemented corrective actions to address these causes and prevent recurrence. The inspection also identified actions had been taken to improve the corrective action process including root cause analyses. Consistent with NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this issue will only be considered in assessing plant performance for a total of four quarters from the date when the issue was identified (May 28, 2002).
Inspection Report# : 2002004*(pdf)*
Inspection Report# : 2002006*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Based on the sample selected for review, the PI&R team concluded that implementation of the corrective action program was adequate.
Based on the sample selected for review, the team concluded that the implementation of the Constellation Energy Group (CEG) corrective action program was adequate. In general, personnel identified problems and entered them into the corrective action program at an appropriate threshold. However, the team identified several minor valve packing and pump seal leaks within the Unit 1 and Unit 2 emergency core cooling system (ECCS) pump rooms that were not identified and captured in CEG's corrective action program. CEG generally prioritized and completed evaluations in a timely fashion and evaluated problems in adequate detail commensurate with the safety significance. The evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. The evaluations of equipment problems generally included operability assessments of sufficient depth to conclude that equipment remained capable of performing its safety functions. CEG also assessed reportability requirements appropriately. CEG corrective actions and improvement initiatives were generally effective in improving equipment reliability and human performance. However, inadequate corrective action follow through for a Unit 2 reactor coolant pump (RCP) support system weld deficiency contributed to a Unit 1 reactor trip. The team also noted that CEG was not fully effective in resolving some recurrent equipment deficiencies. CEG's self-assessments and corrective action program audits identified similar findings.
Inspection Report# : 2002012*(pdf)*

Last modified : May 30, 2003

Calvert Cliffs 1
2Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to take adequate corrective actions for poor quality welds on reactor coolant pump support systems
CEG did not adequately complete identified corrective actions in response to a weld deficiency in the component cooling water (CCW) line to a Unit 2 reactor coolant pump (RCP) in October 2001. The incomplete corrective actions, due to missed inspections of some welds in the RCP support systems, contributed to a failed weld in a lube oil line to a RCP and a Unit 1 reactor trip in July 2002.
Inspection Report# : 2002012*(pdf)*

Mitigating Systems

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely & inadequate corr. actions to prevent 4kV breaker auxiliary switch failure. The condition review for SBM switches used in other applications have been inadquate and incompl. since 1996.
A self-revealing NCV was documented regarding CCNP's inadequate and untimely corrective actions to prevent recurrence of SBM-type auxiliary swithc failure as required by 10 CFR 50, Appendix B, Criteria XVI, "Corrective Action". The finding is considered a PI&R cross-cutting issue due to the failure to prevent recurrent SBM-type switch failures and due to inadequate and incomplete extent of condition reviews since CCNPP's review of industry operating experience regarding degraded and defective GE SBM switches in 1996. The inspectors determined that this event was more than minor because the finding represented an actual loss of the safety function, for 28 days, for the 1B EDG to be capable of providing emergency electrical power to the 14 4kV vital emergency bus. The safety significance of this finding was very low because of a plant design feature that allows the Unit 2 motor driven auxiliary feedwater pump to supply the Unit 1 steam generators during a station blackout (no AC power) at Unit 1. (Section 40A3). '
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
EAL initiating conditions caused delays in declar. approp. emerg. classifi. during simulator as a drill. The EALS & Oper. procedures in lieu of plant conditions alone contributed to this issue.
The inspectors identified a finding that the CCNPP emergency action level (EAL) initiating conditions, as written, caused delays and an incorrect emergency classification declaration during a simulator scenario evaluated as a drill. A contributing cause of this finding was that the content of CCNPP's EALs incorporated plant conditions and operator implementation of procedures as initiating conditions in lieu of using plant conditions alone as the EAL initiating conditions. This issue was determined to be more than minor because if left uncorected it could become a more significant safety concern regarding the potential untimely public notification of an emergency. This finding was classified as Green (of very low safety significance) after NRC management review since the Emergency Preparedness (EP) Significance Determination Process (SDP) did not apply. (Section 1EP6)
Inspection Report# : 2003002*(pdf)*

Significance: W Jul 19, 2002
Identified By: NRC
Item Type: VIO Violation
ANS was not capable of activating for 84 days in a timely manner.
The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offsite ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSPS) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial siren activitation (this activity supplements coverage provided by siren activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White).
Inspection Report# : 2002010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fill & limit contents of shipment of radioactive material to waste processing facility on 7/11/02 in accord with DOT 49 CFR 173.24(b)(2), specified by 10 CFR 71.5, Transp of Lic Material.
From an in-office review, the inspector identified a Non-Cited Violation of 10 CFR 71.5. On July 11, 2002, Constellation Generation's Calvert Cliffs Nuclear Power Plant failed to properly fill and limit the contents of a package of hazardous material (i.e., radioactive material) such that, under conditions normally incident to transportation, the effectiveness of the package would not be substantially reduced, as specified by the Department of Transportation's (DOT) regulation, 49 CFR 173.24(b)(2). On arrival at the processing facility on July 12, 2002, a piece of metal, from the shipment of radioactive material, was found to be protruding from the package. Constellation Generation's failure to fill and limit the contents of the package to preclude a substantial reduction in the effectiveness of the package to ensure conformance with the requirements of 49 CFR 173.24(b)(2) was determined to have very low safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved a breach of a package containing less than a Type A quantity of radioactive material during transit but did not involve a loss of containment of the radioactive material. Although the package was breached and contained contaminated material, the piece of metal protruding from the package was not contaminated with radioactive material.
Inspection Report# : 2002005*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Based on the sample selected for review, the PI&R team concluded that implementation of the corrective action program was adequate.
Based on the sample selected for review, the team concluded that the implementation of the Constellation Energy Group (CEG) corrective action program was adequate. In general, personnel identified problems and entered them into the corrective action program at an appropriate threshold. However, the team identified several minor valve packing and pump seal leaks within the Unit 1 and Unit 2 emergency core cooling system (ECCS) pump rooms that were not identified and captured in CEG's corrective action program. CEG generally prioritized and completed evaluations in a timely fashion and evaluated problems in adequate detail commensurate with the safety significance. The evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. The evaluations of equipment problems generally included operability assessments of sufficient depth to conclude that equipment remained capable of performing its safety functions. CEG also assessed reportability requirements appropriately. CEG corrective actions and improvement initiatives were generally effective in improving equipment reliability and human performance. However, inadequate corrective action follow through for a Unit 2 reactor coolant pump (RCP) support system weld deficiency contributed to a Unit 1 reactor trip. The team also noted

that CEG was not fully effective in resolving some recurrent equipment deficiencies. CEG's self-assessments and corrective action program audits identified similar findings.
Inspection Report# : 2002012*(pdf)*

Last modified : September 04, 2003

Calvert Cliffs 1
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to take adequate corrective actions for poor quality welds on reactor coolant pump support systems
CEG did not adequately complete identified corrective actions in response to a weld deficiency in the component cooling water (CCW) line to a Unit 2 reactor coolant pump (RCP) in October 2001. The incomplete corrective actions, due to missed inspections of some welds in the RCP support systems, contributed to a failed weld in a lube oil line to a RCP and a Unit 1 reactor trip in July 2002.
Inspection Report# : 2002012*(pdf)*

Mitigating Systems

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely & inadequate corr. actions to prevent 4kV breaker auxiliary switch failure. The condition review for SBM switches used in other applications have been inadquate and incompl. since 1996.
A self-revealing NCV was documented regarding CCNP's inadequate and untimely corrective actions to prevent recurrence of SBM-type auxiliary swithc failure as required by 10 CFR 50, Appendix B, Criteria XVI, "Corrective Action". The finding is considered a PI&R cross-cutting issue due to the failure to prevent recurrent SBM-type switch failures and due to inadequate and incomplete extent of condition reviews since CCNPP's review of industry operating experience regarding degraded and defective GE SBM switches in 1996.

The inspectors determined that this event was more than minor because the finding represented an actual loss of the safety function, for 28 days, for the 1B EDG to be capable of providing emergency electrical power to the 14 4kV vital emergency bus. The safety significance of this finding was very low because of a plant design feature that allows the Unit 2 motor driven auxiliary feedwater pump to supply the Unit 1 steam generators during a station blackout (no AC power) at Unit 1. (Section 40A3).
'
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
EAL initiating conditions caused delays in declar. approp. emerg. classifi. during simulator as a drill. The EALS & Oper. procedures in lieu of plant conditions alone contributed to this issue.
The inspectors identified a finding that the CCNPP emergency action level (EAL) initiating conditions, as written, caused delays and an incorrect emergency classification declaration during a simulator scenario evaluated as a drill. A contributing cause of this finding was that the content of CCNPP's EALs incorporated plant conditions and operator implementation of procedures as initiating conditions in lieu of using plant conditions alone as the EAL initiating conditions.

This issue was determined to be more than minor because if left uncorected it could become a more significant safety concern regarding the potential untimely public notification of an emergency. This finding was classified as Green (of very low safety significance) after NRC management review since the Emergency Preparedness (EP) Significance Determination Process (SDP) did not apply. (Section 1EP6)
Inspection Report# : 2003002*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Based on the sample selected for review, the PI&R team concluded that implementation of the corrective action program was adequate.
Based on the sample selected for review, the team concluded that the implementation of the Constellation Energy Group (CEG) corrective action program was adequate. In general, personnel identified problems and entered them into the corrective action program at an appropriate threshold. However, the team identified several minor valve packing and pump seal leaks within the Unit 1 and Unit 2 emergency core cooling system (ECCS) pump rooms that were not identified and captured in CEG's corrective action program.

CEG generally prioritized and completed evaluations in a timely fashion and evaluated problems in adequate detail

commensurate with the safety significance. The evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. The evaluations of equipment problems generally included operability assessments of sufficient depth to conclude that equipment remained capable of performing its safety functions. CEG also assessed reportability requirements appropriately.

CEG corrective actions and improvement initiatives were generally effective in improving equipment reliability and human performance. However, inadequate corrective action follow through for a Unit 2 reactor coolant pump (RCP) support system weld deficiency contributed to a Unit 1 reactor trip. The team also noted that CEG was not fully effective in resolving some recurrent equipment deficiencies. CEG's self-assessments and corrective action program audits identified similar findings.
Inspection Report# : 2002012*(pdf)*

Last modified : February 05, 2004

Calvert Cliffs 1

Initiating Events

Significance: G Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to take adequate corrective actions for poor quality welds on reactor coolant pump support systems
CEG did not adequately complete identified corrective actions in response to a weld deficiency in the component cooling water (CCW) line to a Unit 2 reactor coolant pump (RCP) in October 2001. The incomplete corrective actions, due to missed inspections of some welds in the RCP support systems, contributed to a failed weld in a lube oil line to a RCP and a Unit 1 reactor trip in July 2002.
Inspection Report# : 2002012*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating licensees to support refueling outages as senior operators limited to fuel handling.
The inspectors identified a Non-Cited Violation for failure to comply with the requirements of 10 CFR 55.53(f)(2) for reactivating operator licenses to support refueling outages as senior operators limited to fuel handling (LSRO). This finding was determined to be more than minor but of very low safety significance. It is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, improper re-activation would result in improper training which could cause errors in fuel handling activities resulting in fuel damage and potential radiological releases. The SDP is entered because the performance deficiency is related to operator license conditions. The performance deficiency was determined to be of very low safety significance (green) because more than 20% of the LSRO license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). No refueling events have occurred due to this training deficiency.
Inspection Report# : 2002004*(pdf)*

Barrier Integrity

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control,"

regarding the Unit 1 and 2 main steam line break accident analyses.
The inspectors identified a Non-Cited Violation for inadequate design control associated with the Units 1 and 2 main steam line break (MSLB) accident analyses. The analyses credited the closure of the main feedwater isolation valves (MFIVs) to limit containment peak pressure even though in certain single failure scenarios, the valves may not fully close due to high differential pressure. This violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," is based on the example provided in NRC Manual Chapter 0612, Appendix E, Example 3.i. The above MFIV finding is more than minor because an error identified in an accident analysis assumption requires the accident analysis to be re-performed to assure accident analysis requirements are met. The MFIV finding was determined to be of very low safety significance (green) based on the fact that when the licensee revises their MSLB accident analyses to credit closure of the main feedwater regulating valves, it is likely to result in a net reduction in containment peak pressure.
Inspection Report# : 2002004*(pdf)*

Emergency Preparedness

Significance: W Jul 19, 2002
Identified By: NRC
Item Type: VIO Violation
ANS was not capable of activating for 84 days in a timely manner.
The inspector identified an apparent violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(5) and Appendix E.IV.D.3. The Calvert County offsite ANS (49 sirens) was not capable of being activiated in a timely manner for 84 days due to the removal of a computer icon used for activating the sirens at the Calvert County, Maryland 911 Center. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSPS) and according to the Emergency Preparedness (EP) Significant Determination Process (SDP), (Manual Chapter 0609, EP Risk Determinatl Flow Chart, Sheet 1, Third Path, Section 4) failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, using Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a Risk Significant Planning Standard," and the EP SDP it recognizes that a finding "placed in context" through the SDP can potentially result in a color (e.g. Green, White, Yellow, Redc) that exceeds the actual impact on public heatlh and safety. The NRC concluded that the siren activation problem did not have a substantial impact on the EP Cornerstone Objective, and therefore, the finding does not rise to the level of substantial safety significance and is more appropriately characterized as low to moderate safety significance (White). In making this determination, the NRCconsidered that: (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial siren activitation (this activity supplements coverage provided by siren activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC considers the signifance of the problem to be the length of time the problem was undetected which is considered a low to moderate safety significance (White). Accordingly, the NRC has determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The NRC considers the true significance of the problem to be in the length of time the problem was undetected. Therefore, the finding is considered to be of low to moderate safety significance (White).
Inspection Report# : 2002010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fill & limit contents of shipment of radioactive material to waste processing facility on 7/11/02 in accord with DOT 49 CFR 173.24(b)(2), specified by 10 CFR 71.5, Transp of Lic Material.
From an in-office review, the inspector identified a Non-Cited Violation of 10 CFR 71.5. On July 11, 2002, Constellation Generation's Calvert Cliffs Nuclear Power Plant failed to properly fill and limit the contents of a package of hazardous material (i.e., radioactive material) such that, under conditions normally incident to transportation, the effectiveness of the package would not be substantially reduced, as specified by the Department of Transportation's (DOT) regulation, 49 CFR 173.24(b)(2). On arrival at the processing facility on July 12, 2002, a piece of metal, from the shipment of radioactive material, was found to be protruding from the package. Constellation Generation's failure to fill and limit the contents of the package to preclude a substantial reduction in the effectiveness of the package to ensure conformance with the requirements of 49 CFR 173.24(b)(2) was determined to have very low safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved a breach of a package containing less than a Type A quantity of radioactive material during transit but did not involve a loss of containment of the radioactive material. Although the package was breached and contained contaminated material, the piece of metal protruding from the package was not contaminated with radioactive material.
Inspection Report# : 2002005*(pdf)*

Significance: W Jun 29, 2002
Identified By: NRC
Item Type: VIO Violation
Failure to prepare a shipment of radioactive material so as not to exceed the transportation radiation level limits of 49 CFR 173.441(a).
From an in-office review, the inspector identified an apparent finding of low to moderate safety significance. On May 23, 2002, the licensee failed to prepare a shipment of radioactive material to a waste processing facility in a manner such that, under conditions normally incident to transportation, the radiation level at any point on the external surface of the package would not exceed 200 millirem per hour, as specified by the Department of Transportation regulation 49 CFR 173.441(a). Upon arrival at the processing facility on May 24, 2002, the radiation dose rates, measured on portions of the external surface of the package were as high as 300 millirem per hour, which is in excess of the limits specified by the regulatory requirement. The failure to properly prepare the shipment in a manner to assure conformance with the requirements of 49 CFR 173.441(a) was determined to have low to moderate safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved the transportation of radioactive material in which an external radiation limit was exceeded, but was not greater than 5 times the regulatory limit. A supplemental inspection was performed by the NRC to assess the licensee's evaluations and corrective actions associated with a finding of low to moderate safety significance (WHITE) involving failure to properly prepare a shipment of Class 7 (radioactive) materials for shipment, on May 23, 2002, to a vendor waste processing facility located in Oak Ridge, Tennessee. The inspection was conducted in accodance with NRC Inspection Procedure 95001, "Inspection For One or Two White Inputs in a Strategic Performance Area." This performance issue was preliminarily determined to be WHITE, in NRC Inspection Report 05000317-02-04, 05000318-02-04, dated July 30, 2002. The licensee did not contest the characterization of the finding and no Regulatory Conference was held. The issue received final characterization as a WHITE finding in an August 29, 2002, NRC letter to the licensee. The licensee provided its response to the WHITE finding, and associated violation, in letter dated September 17, 2002. The inspection determined that the licensee performed an evaluation of the issue, identified root and contributing causes, and identified

and implemented immediate and compensatory corrective actions to address these causes and prevent recurrence. Notwithstanding, it was not apparent that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to prevent recurrence. Specifically, multiple examples were identified where packaged radioactive materials were not properly stabilized resulting in noncomformance with applicable shipping regulations. The corrective actions taken and planned do not appear to provide assurance that the specific performance deficiency was corrected or that actions on broader issues (e.g., program procedures, human performance, or oversight activities) were sufficient to preclude recurrence of material packaging and stabilization concerns. Consequently, the inspection objectives outlined in the NRC Inspection Procedure 95001 could not be achieved. Further, and consistent with the guidance contained in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program", this issue will remain open and will not be removed from the Action Matrix pending additional NRC inspection. A supplemental inspection was performed by the NRC to assess Constellation Generation's evaluations and corrective actions associated with a WHITE finding involving identification of elevated radiation dose rates on a package of radioactive material shipped from the Calvert Cliffs facility on May 23, 2002, to a waste processing facility. (Reference EA-02-138, NRC Report No. 50-317/02-04; 50-318/02-04, dated August 19, 2002). A previous supplemental inspection, conducted in October 2002, to assure that the causes of the performance issues associated with this finding were understood, the extent of condition had been identified, and that corrective actions were sufficient to prevent recurrence, was unable to assure that the extent of condition of risk significant performance issues had been identified or that the corrective actions taken or planned were sufficient to address the issues as required by the inspection objectives outlined in NRC Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." (Reference NRC Inspection Report No. 50-317/02-011; 50-318/02-011, dated November 7, 2002). The current inspection identified that Constellation Generation conducted a detailed Collective Significance Analysis of this matter, identified root and contributing causes, and identified and implemented corrective actions to address these causes and prevent recurrence. The inspection also identified actions had been taken to improve the corrective action process including root cause analyses. Consistent with NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this issue will only be considered in assessing plant performance for a total of four quarters from the date when the issue was identified (May 28, 2002).
Inspection Report# : 2002004*(pdf)*
Inspection Report# : 2002006*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
Based on the sample selected for review, the PI&R team concluded that implementation of the corrective action program was adequate.
Based on the sample selected for review, the team concluded that the implementation of the Constellation Energy Group (CEG) corrective action program was adequate. In general, personnel identified problems and entered them into the corrective action program at an appropriate threshold. However, the team identified several minor valve packing and pump seal leaks within the Unit 1 and Unit 2 emergency core cooling system (ECCS) pump rooms that were not identified and captured in CEG's corrective action program. CEG generally prioritized and completed evaluations in a timely fashion and evaluated problems in adequate detail commensurate with the safety significance. The evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to

address the causes. The evaluations of equipment problems generally included operability assessments of sufficient depth to conclude that equipment remained capable of performing its safety functions. CEG also assessed reportability requirements appropriately. CEG corrective actions and improvement initiatives were generally effective in improving equipment reliability and human performance. However, inadequate corrective action follow through for a Unit 2 reactor coolant pump (RCP) support system weld deficiency contributed to a Unit 1 reactor trip. The team also noted that CEG was not fully effective in resolving some recurrent equipment deficiencies. CEG's self-assessments and corrective action program audits identified similar findings.
Inspection Report# : 2002012*(pdf)*

Last modified : March 25, 2003

Calvert Cliffs 1
1Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
HPSI Design Support/Seismic Structural Records not Retrievable (Section 1R21.b.1)
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, related to the licensee's inability to retrieve records required to furnish evidence of the adequate performance of activities affecting the quality of the high pressure safety injection (hPSI) system. Specifically, quality records, identifiable with both the design change details for a Unit 2 HPSI pipe support snubber installation and the design calculations for the seismic adequacy for structural platforms in the refueling water tank (RWT) rooms in Units 1 & 2, were not retrievable.

The finding was evaluated using Manual Chapter 0612, Appendix E, example 1.b and determined to be more then mainor because the records were irretrievable lost. The finding wa associated with the attribute of design control (initial design, plant modifications). This issue is considered a very low safety significance finding because, while the required records were not retrievable, an as-built design review was conducted by the licensee which demonstrated the structural adequacy of the existinig field configurations (Section 1R21.b.1)
Inspection Report# : 2004002*(pdf)*

Significance:  Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Design Basis for ECCS Mini Flow Valve Indication not Translated into DesignSpecifications (Section 1R21.b.3)
The team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for CEG's failure to correctly translate the design specifications into the design of the ECCS Mini Flow Valve Indication. Speficially, the control room valve indications on two normaly opened and de-energeized mini flow valves were not redundant and did not meet single failure criteria.

This finding is more than minor since it is associated with the design control attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated using Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations". The issue was a design or qualification deficiency and was determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for internal or external event initiated core damage sequences. (Section 1R21.b.3)
Inspection Report# : 2004002*(pdf)*

Significance:  Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
High Pressure Safety Injection System Operation Outside of Design Basis (Section 1R21.b.2)
The team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for constellation Energy Group's (CEG) failure to correctly translate the emergency core cooling system (ECCS) design basis into the HPSI system operating instructions and procedures. Specifically, for shot durations during surveillance test activities, the HPSI loop isolation valve was placed in a condtion that could impact core cooling if the redundant train of HPSI were to fail.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (i.e., loss of coolant accidents) to prevent undersirable consequences (core damage). The finding was associated with the attribute of configuration control (operating equipment lineup). The finding was of very low safety significance because it represented the loss of single train of HPSI for less than the TS 3.5.2.A allowed outage time (72 hours) during each occurrence. (Section 1R21.b.2)

Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to adequately evaluate suction stabilizer failures and perform repairs in a timely manner
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions, which requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to promptly correct a condition adverse to quality associated with suction stabilizer failures, which if left uncorrected could have resulted in the failure of a charging pump. These failures occurred on the Unit 1, 13 charging pump in October, 2002, and on the Unit 2, 23 charging pump in September, 2002. The associated repairs were not timely and did not occur until October, 2003, and December 2003, respectively.

This finding is greater than minor because it affects the Reactor Safety, Mitigating Systems attribute of equipment performance, and the availability, reliability, and capability objective of the mitigating systems cornerstone because if left uncorrected, this condition could have led to the failure of a charging pump. The issue was of very low safety significance because the finding was not a design or qualification deficiency, the finding did not represent an actual loss of safety function, and the finding did not screen as potentially risk significant due to a seismic, fire flooding, or severe weather initiating event. Additionally, the failure of a charging pump did not occur while its suction stabilizer was in a failed condition. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.
Inspection Report# : 2003006*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct repeated failures of CCWHX saltwater flow verification.
The licensee failed to take appropriate corrective actions in a timely manner to address and corect repeat component cooling water heat exchanger (CCWHX) salterwater system test failures.
Inspection Report# : 2003009*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to prevent the recurrence of a significant condition adverse to quality involving mispositioning events
A significant condition adverse to quality involving several component mispositioning events associated with several safety-related systems occured between January 2002 and October 2003 and effective measures were not implemented to determine the cause of the problem and to preclude recurrence.
Inspection Report# : 2003009*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : May 05, 2004

Calvert Cliffs 1
2Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to assess and manage risk associated with Unit 1 RPS power supply replacement activities during reduced inventory. (Section 1R13)
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) which requires that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, the licensee failed to identify and therefore assess and manage the risks associated with performing maintenance on the 'B' channel of the reactor protection system (RPS) while operating in a reduced inventory condition. This maintenance activity resulted in the loss of one of the two shutdown cooling (SDC) operating trains for about 18 minutes with a corresponding heatup of the reactor coolant system (RCS) of 2 degrees Fahrenheit (F).

This finding is greater than minor because it affected an attribute and objective of the Initiating Event Cornerstone in that human performance inadequacies resulted in an event that upset plant stability during shutdown operations. This issue was evaluated in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, and was determined to be of very low safety significance. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Human Performance. (Section 1R13)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to comply with station work control procedures. (Section 3.4)
A self-revealing event identified a finding in that CCNPP did not follow procedural requirements in their risk assessment and control of the work on March 20, 2004, which resulted in an unanticipated reactor trip. Specifically, the provisions and controls of procedures NO-1-100, "Conduct of Operations," NO-1-117, "Integrated Risk Management," and MN-1-100, "Conduct of Maintenance," were not followed.

This finding was more than minor because the failures to follow station procedures affected the Initiating Events cornerstone in that the failure to properly risk-classify and control the work in the control room on March 20 lead to the reactor trip. This finding had very low safety significance because the finding did not represent an actual loss of a safety function, and was not potentially risk significant due to an external initiating event.

A contributing cause of the finding was related to the Human Performance cross-cutting area because CCNPP managers and staff did not properly implement station operations, risk management, and maintenance procedures. (Section 3.4)
Inspection Report# : 2004008*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to adequately implement a modification design review of the digital feedwater control system. (Section 2.4)
A self-revealing finding of very low safety significance was identified because CCNPP failed to perform an adequate design review which resulted in reduced reliability of the digital feedwater system during a plant event on March 20, 2004.

This finding was more than minor because it effected the design control attributes of the Initiating Events cornerstone. Incorrectly specifying the design voltage resulted in reduced reliability of the digital feedwater control system which increased the likelihood of an event that upset plant stability during power operation. This finding was of very low safety significance, because one of two turbine driven feedwater pumps and one of three condensate and condensate booster pumps remained operable during the Unit 1 March 20, 2004, event. (Section 2.4)

Inspection Report# : 2004008*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Combustible Material Control in Unit 1 69' West Electrical Room
The team identified a non-cited violation of License Condtion 3.E, because Calvert Cliffs Nuclear Power Plant was not maintaining control of

combustible materials in the Unit 1 69' West Electrical Room as described and approved in the safety evaluation report issued September 14, 1979.

Since the finding affected the initiating events cornerstone objective the finding is more than minor. The finding is of very low safety significance because the material was not located below cable trays carrying safety related cables and the material had been evaluated in the combustible loading calculations. (Section 1RO5.4)
Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement planned, scheduled maintenance. (Section 4OA2)
The inspector identified a non-cited violation for failure to implement procedures to control maintenance activities required by Technical Specification 5.4.1.a. and Regulatory Guide 1.33. The licensee failed to implement procedures to ensure that planned, scheduled maintenance was actually being performed. Maintenance personnel, by procedure, are permitted to decide whether or not to clean and lubricate 480v breakers. If the maintenance personnel decide not to perform the scheduled clean and lubricate, no method is specified or available to report this situation to maintenance and engineering management.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480v electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. (Section 4OA2)
Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate corrective actions for 480v breaker testing deficiency. (Section 4OA2)
The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to promptly correct a testing deficiency identified during a CX relay failure in 1998. When action was taken in October of 2001, it was not sufficient to prevent further CX relay failures in December 2003 and February 2004.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480 volt (v) electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. (Section 4OA2)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement design control measures for the 12 CC HX. (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, associated with a self-revealing finding, which requires that measures be established to assure that design basis are correctly translated into procedures. Specifically, the licensee failed to incorporate a design flow calculation into an operating procedure which allowed the licensee to operate the 12 component cooling water heat exchanger (CC HX) in excess of its maximum shell side flow versus time curves. This failure resulted in tube failures in the only available, and in-service CC HX which supported SDC operations of the RCS.

This finding is greater than minor because it affected an attribute and the objective of the Mitigating System Cornerstone in that inadequate procedure quality resulted in degraded availability, reliability and capability of a system that responds to initiating events to prevent undesirable consequences. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, this finding was determined to be of very low safety significance (Green) since the safety function of the component cooling water system was not lost. (Section 1R15)

Inspection Report# : 2004005*(pdf)*

Significance: G May 28, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to provide protection in accordance with 10 CFR Part 50, Appendix R, Section III.G.2
The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2, because Calvert Cliffs Nuclear Power Plant utiilized manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection to the cables associated with that equipment, as required by the regulation.

In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection", (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonoable and are expected to meet the criteria outlined in the Enclosure 2 of inspection procedure 71111.05. (Section 1RO5.5)
Inspection Report# : 2004003*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: FIN Finding
Inadequate Breaker Coordination
The team identified a finding in that protective relay settings for the bustie circuit breakers for the 1A and OC emergency diesel generators were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480VAC load centers.

Because the finding affected the design control attribute of the mitigating systems cornerstone, it was more than minor. Since the issue did not result in an actual loss of a safety function of a single train of equipment, the issue was determined to be of very low safety significance.
Inspection Report# : 2004003*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Effective Corrective Actions Associated with Component Mispositioning Events
The inspector selected seven issues identified in the Corrective Action Program (CAP) for detailed review (Issue Report Nos. IR4-008-987 and -988, IR4-009-607, -608, -642, and -680, and IR4-023-854). The issues were associated with site dose reduction, inadvertent release of radioactive material from the RCA, position qualifications,

completion and documentation of required training, negative trends in written communications identified by self-assessment review, and documentation of radioactive material storage locations. On February 5, the inspector met with the Health Physics Support Supervisor to discuss these Issue Reports. The documented reports for the issues were reviewed to ensure that the full extent of the issues was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized.

Inspection Report# : 2004004*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
HPSI Design Support/Seismic Structural Records not Retrievable (Section 1R21.b.1)
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, related to the licensee's inability to retrieve records required to furnish evidence of the adequate performance of activities affecting the quality of the high pressure safety injection (hPSI) system. Specifically, quality records, identifiable with both the design change details for a Unit 2 HPSI pipe support snubber installation and the design calculations for the seismic adequacy for structural platforms in the refueling water tank (RWT) rooms in Units 1 & 2, were not retrievable.

The finding was evaluated using Manual Chapter 0612, Appendix E, example 1.b and determined to be more then mainor because the records were irretrievable lost. The finding wa associated with the attribute of design control (initial design, plant modifications). This issue is considered a very low safety significance finding because, while the required records were not retrievable, an as-built design review was conducted by the licensee which demonstrated the structural adequacy of the existinig field configurations (Section 1R21.b.1)
Inspection Report# : 2004002*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
High Pressure Safety Injection System Operation Outside of Design Basis (Section 1R21.b.2)
The team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for constellation Energy Group's (CEG) failure to correctly translate the emergency core cooling system (ECCS) design basis into the HPSI system operating instructions and procedures. Specifically, for shot durations during surveillance test activities, the HPSI loop isolation valve was placed in a condtion that could impact core cooling if the redundant train of HPSI were to fail.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (i.e., loss of coolant accidents) to prevent undersirable consequences (core damage). The finding was

associated with the attribute of configuration control (operating equipment lineup). The finding was of very low safety significance because it represented the loss of single train of HPSI for less than the TS 3.5.2.A allowed outage time (72 hours) during each occurrence. (Section 1R21.b.2)
Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to adequately evaluate suction stabilizer failures and perform repairs in a timely manner
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions, which requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to promptly correct a condition adverse to quality associated with suction stabilizer failures, which if left uncorrected could have resulted in the failure of a charging pump. These failures occurred on the Unit 1, 13 charging pump in October, 2002, and on the Unit 2, 23 charging pump in September, 2002. The associated repairs were not timely and did not occur until October, 2003, and December 2003, respectively.

This finding is greater than minor because it affects the Reactor Safety, Mitigating Systems attribute of equipment performance, and the availability, reliability, and capability objective of the mitigating systems cornerstone because if left uncorrected, this condition could have led to the failure of a charging pump. The issue was of very low safety significance because the finding was not a design or qualification deficiency, the finding did not represent an actual loss of safety function, and the finding did not screen as potentially risk significant due to a seismic, fire flooding, or severe weather initiating event. Additionally, the failure of a charging pump did not occur while its suction stabilizer was in a failed condition. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.
Inspection Report# : 2003006*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct repeated failures of CCWHX saltwater flow verification.
The licensee failed to take appropriate corrective actions in a timely manner to address and corect repeat component cooling water heat exchanger (CCWHX) salterwater system test failures.
Inspection Report# : 2003009*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to prevent the recurrence of a significant condition adverse to quality involving mispositioning events
A significant condition adverse to quality involving several component mispositioning events associated with several safety-related systems occured between January 2002 and October 2003 and effective measures were not implemented to determine the cause of the problem and to preclude recurrence.
Inspection Report# : 2003009*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 07, 2003
Identified By: NRC
Item Type: FIN Finding
Problem Identification & Resolution Team Assessment
The team determined that the licensee was generally effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Once entered into the system, issues were usually prioritized appropriately and in a timely fashion, and were evaluated in adequate detail commensurate with the safety significance. Overall, the evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. However, in some cases, the corrective action program was not being used effectively and consistently to resolve and prevent problems. There were some instances where issue reports were characterized at a lower category than prescribed by the corrective action program. Further, the team identified some instances where issue evaluations, as well as the associated corrective actions, were not effective in resolving problems. On the basis of interviews conducted during the inspection, workers at the station felt free to input safety findings into the corrective action program.

Inspection Report# : 2003009*(pdf)*

Last modified : September 08, 2004

Calvert Cliffs 1
3Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to assess and manage risk associated with Unit 1 RPS power supply replacement activities during reduced inventory. (Section 1R13)
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) which requires that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, the licensee failed to identify and therefore assess and manage the risks associated with performing maintenance on the 'B' channel of the reactor protection system (RPS) while operating in a reduced inventory condition. This maintenance activity resulted in the loss of one of the two shutdown cooling (SDC) operating trains for about 18 minutes with a corresponding heatup of the reactor coolant system (RCS) of 2 degrees Fahrenheit (F).

This finding is greater than minor because it affected an attribute and objective of the Initiating Event Cornerstone in that human performance inadequacies resulted in an event that upset plant stability during shutdown operations. This issue was evaluated in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, and was determined to be of very low safety significance. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Human Performance. (Section 1R13)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to adequately implement a modification design review of the digital feedwater control system. (Section 2.4)
A self-revealing finding of very low safety significance was identified because CCNPP failed to perform an adequate design review which resulted in reduced reliability of the digital feedwater system during a plant event on March 20, 2004.

This finding was more than minor because it effected the design control attributes of the Initiating Events cornerstone. Incorrectly specifying the design voltage resulted in reduced reliability of the digital feedwater control system which increased the likelihood of an event that upset plant stability during power operation. This finding was of very low safety significance, because one of two turbine driven feedwater pumps and one of three condensate and condensate booster pumps remained operable during the Unit 1 March 20, 2004, event. (Section 2.4)

Inspection Report# : 2004008*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to comply with station work control procedures. (Section 3.4)
A self-revealing event identified a finding in that CCNPP did not follow procedural requirements in their risk assessment and control of the work on March 20, 2004, which resulted in an unanticipated reactor trip. Specifically, the provisions and controls of procedures NO-1-100, "Conduct of Operations," NO-1-117, "Integrated Risk Management," and MN-1-100, "Conduct of Maintenance," were not followed.

This finding was more than minor because the failures to follow station procedures affected the Initiating Events cornerstone in that the failure to properly risk-classify and control the work in the control room on March 20 lead to the reactor trip. This finding had very low safety significance because the finding did not represent an actual loss of a safety function, and was not potentially risk significant due to an external initiating event.

A contributing cause of the finding was related to the Human Performance cross-cutting area because CCNPP managers and staff did not properly implement station operations, risk management, and maintenance procedures. (Section 3.4)
Inspection Report# : 2004008*(pdf)*

Significance: G May 28, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Combustible Material Control in Unit 1 69' West Electrical Room
The team identified a non-cited violation of License Condtion 3.E, because Calvert Cliffs Nuclear Power Plant was not maintaining control of combustible materials in the Unit 1 69' West Electrical Room as described and approved in the safety evaluation report issued September 14, 1979.

Since the finding affected the initiating events cornerstone objective the finding is more than minor. The finding is of very low safety significance because the material was not located below cable trays carrying safety related cables and the material had been evaluated in the combustible loading calculations. (Section 1RO5.4)
Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Sep 29, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Brace Erected Scaffolding (Section 1R15)
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented during the construction of scaffolding erected in the vicinity of safety-related equipment. Specifically, on January 14, 2004, and again on September 14, 2004, the inspectors identified that scaffolding was constructed in close proximity to safety-related equipment without the required bracing. An engineering evaluation performed by the licensee, associated with the January 14, 2004 occurrence, determined that the scaffolding could aversely affect the safety-related 14A, 480 Vac electrical load center cooling function following a seismic event.

This finding is greater than minor because it was associated with the mitigating system cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Additionally, this finding is consistent with a greater than minor finding as described in NRC Manual Chapter 0612, Power Reactor Inspection Report, Appendix E, Example 4.a. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a phase 1 risk assessment performed in the reactor safety significance determination process. The inspectors identified that a contributing cause of this finding was related to the cross-cutting areas of Human Performance since plant procedures were not followed properly. (Section 1R15)

Inspection Report# : 2004006*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate corrective actions for 480v breaker testing deficiency. (Section 4OA2)
The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to promptly correct a testing deficiency identified during a CX relay failure in 1998. When action was taken in October of 2001, it was not sufficient to prevent further CX relay failures in December 2003 and February 2004.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480 volt (v) electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. (Section 4OA2)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement design control measures for the 12 CC HX. (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, associated with a self-revealing finding, which requires that measures be established to assure that design basis are correctly translated into procedures. Specifically, the licensee failed to incorporate a design flow calculation into an operating procedure which allowed the licensee to operate the 12 component cooling water heat exchanger (CC HX) in excess of its maximum shell side flow versus time curves. This failure resulted in tube failures in the

only available, and in-service CC HX which supported SDC operations of the RCS.

This finding is greater than minor because it affected an attribute and the objective of the Mitigating System Cornerstone in that inadequate procedure quality resulted in degraded availability, reliability and capability of a system that responds to initiating events to prevent undesirable consequences. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, this finding was determined to be of very low safety significance (Green) since the safety function of the component cooling water system was not lost. (Section 1R15)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement planned, scheduled maintenance. (Section 4OA2)
The inspector identified a non-cited violation for failure to implement procedures to control maintenance activities required by Technical Specification 5.4.1.a. and Regulatory Guide 1.33. The licensee failed to implement procedures to ensure that planned, scheduled maintenance was actually being performed. Maintenance personnel, by procedure, are permitted to decide whether or not to clean and lubricate 480v breakers. If the maintenance personnel decide not to perform the scheduled clean and lubricate, no method is specified or available to report this situation to maintenance and engineering management.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480v electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. (Section 4OA2)
Inspection Report# : 2004005*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: FIN Finding
Inadequate Breaker Coordination
The team identified a finding in that protective relay settings for the bustie circuit breakers for the 1A and OC emergency diesel generators were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480VAC load centers.

Because the finding affected the design control attribute of the mitigating systems cornerstone, it was more than minor. Since the issue did not result in an actual loss of a safety function of a single train of equipment, the issue was determined to be of very low safety significance.
Inspection Report# : 2004003*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to provide protection in accordance with 10 CFR Part 50, Appendix R, Section III.G.2
The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2, because Calvert Cliffs Nuclear Power Plant utiilized manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection to the cables associated with that equipment, as required by the regulation.

In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection", (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonoable and are expected to meet the criteria outlined in the Enclosure 2 of inspection procedure 71111.05. (Section 1RO5.5)
Inspection Report# : 2004003*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Effective Corrective Actions Associated with Component Mispositioning Events
The inspector selected seven issues identified in the Corrective Action Program (CAP) for detailed review (Issue Report Nos. IR4-008-987 and -988, IR4-009-607, -608, -642, and -680, and IR4-023-854). The issues were associated with site dose reduction, inadvertent release of radioactive material from the RCA, position qualifications,

completion and documentation of required training, negative trends in written communications identified by self-assessment review, and documentation of radioactive material storage locations. On February 5, the inspector met with the Health Physics Support Supervisor to discuss these Issue Reports. The documented reports for the issues were reviewed to ensure that the full extent of the issues was identified, an

appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized.

Inspection Report# : 2004004*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
HPSI Design Support/Seismic Structural Records not Retrievable (Section 1R21.b.1)
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, related to the licensee's inability to retrieve records required to furnish evidence of the adequate performance of activities affecting the quality of the high pressure safety injection (hPSI) system. Specifically, quality records, identifiable with both the design change details for a Unit 2 HPSI pipe support snubber installation and the design calculations for the seismic adequacy for structural platforms in the refueling water tank (RWT) rooms in Units 1 & 2, were not retrievable.

The finding was evaluated using Manual Chapter 0612, Appendix E, example 1.b and determined to be more then mainor because the records were irretrievable lost. The finding wa associated with the attribute of design control (initial design, plant modifications). This issue is considered a very low safety significance finding because, while the required records were not retrievable, an as-built design review was conducted by the licensee which demonstrated the structural adequacy of the existinig field configurations (Section 1R21.b.1)
Inspection Report# : 2004002*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
High Pressure Safety Injection System Operation Outside of Design Basis (Section 1R21.b.2)
The team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for constellation Energy Group's (CEG) failure to correctly translate the emergency core cooling system (ECCS) design basis into the HPSI system operating instructions and procedures. Specifically, for shot durations during surveillance test activities, the HPSI loop isolation valve was placed in a condtion that could impact core cooling if the redundant train of HPSI were to fail.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (i.e., loss of coolant accidents) to prevent undersirable consequences (core damage). The finding was associated with the attribute of configuration control (operating equipment lineup). The finding was of very low safety significance because it represented the loss of single train of HPSI for less than the TS 3.5.2.A allowed outage time (72 hours) during each occurrence. (Section 1R21.b.2)
Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to adequately evaluate suction stabilizer failures and perform repairs in a timely manner
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions, which requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to promptly correct a condition adverse to quality associated with suction stabilizer failures, which if left uncorrected could have resulted in the failure of a charging pump. These failures occurred on the Unit 1, 13 charging pump in October, 2002, and on the Unit 2, 23 charging pump in September, 2002. The associated repairs were not timely and did not occur until October, 2003, and December 2003, respectively.

This finding is greater than minor because it affects the Reactor Safety, Mitigating Systems attribute of equipment performance, and the availability, reliability, and capability objective of the mitigating systems cornerstone because if left uncorrected, this condition could have led to the failure of a charging pump. The issue was of very low safety significance because the finding was not a design or qualification deficiency, the finding did not represent an actual loss of safety function, and the finding did not screen as potentially risk significant due to a seismic, fire flooding, or severe weather initiating event. Additionally, the failure of a charging pump did not occur while its suction stabilizer was in a failed condition. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.
Inspection Report# : 2003006*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct repeated failures of CCWHX saltwater flow verification.
The licensee failed to take appropriate corrective actions in a timely manner to address and corect repeat component cooling water heat exchanger (CCWHX) salterwater system test failures.

Inspection Report# : 2003009*(pdf)*

Significance: G Nov 07, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to prevent the recurrence of a significant condition adverse to quality involving mispositioning events
A significant condition adverse to quality involving several component mispositioning events associated with several safety-related systems occured between January 2002 and October 2003 and effective measures were not implemented to determine the cause of the problem and to preclude recurrence.
Inspection Report# : 2003009*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 07, 2003
Identified By: NRC
Item Type: FIN Finding
Problem Identification & Resolution Team Assessment
The team determined that the licensee was generally effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Once entered into the system, issues were usually prioritized appropriately and in a timely fashion, and were evaluated in adequate detail commensurate with the safety significance. Overall, the evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. However, in some cases, the corrective action program was not being used effectively and consistently to resolve and prevent problems. There were some instances where issue reports were characterized at a lower category than prescribed by the corrective action program. Further, the team identified some instances where issue evaluations, as well as the associated corrective actions, were not effective in resolving problems. On the basis of interviews conducted during the inspection, workers at the station felt free to input safety findings into the corrective action program.

Inspection Report# : 2003009*(pdf)*

Last modified : December 29, 2004

Calvert Cliffs 1
4Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to assess and manage risk associated with Unit 1 RPS power supply replacement activities during reduced inventory. (Section 1R13)
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) which requires that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, the licensee failed to identify and therefore assess and manage the risks associated with performing maintenance on the 'B' channel of the reactor protection system (RPS) while operating in a reduced inventory condition. This maintenance activity resulted in the loss of one of the two shutdown cooling (SDC) operating trains for about 18 minutes with a corresponding heatup of the reactor coolant system (RCS) of 2 degrees Fahrenheit (F).

This finding is greater than minor because it affected an attribute and objective of the Initiating Event Cornerstone in that human performance inadequacies resulted in an event that upset plant stability during shutdown operations. This issue was evaluated in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, and was determined to be of very low safety significance. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Human Performance. (Section 1R13)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to comply with station work control procedures. (Section 3.4)
A self-revealing event identified a finding in that CCNPP did not follow procedural requirements in their risk assessment and control of the work on March 20, 2004, which resulted in an unanticipated reactor trip. Specifically, the provisions and controls of procedures NO-1-100, "Conduct of Operations," NO-1-117, "Integrated Risk Management," and MN-1-100, "Conduct of Maintenance," were not followed.

This finding was more than minor because the failures to follow station procedures affected the Initiating Events cornerstone in that the failure to properly risk-classify and control the work in the control room on March 20 lead to the reactor trip. This finding had very low safety significance because the finding did not represent an actual loss of a safety function, and was not potentially risk significant due to an external initiating event.

A contributing cause of the finding was related to the Human Performance cross-cutting area because CCNPP managers and staff did not properly implement station operations, risk management, and maintenance procedures. (Section 3.4)
Inspection Report# : 2004008*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to adequately implement a modification design review of the digital feedwater control system. (Section 2.4)
A self-revealing finding of very low safety significance was identified because CCNPP failed to perform an adequate design review which resulted in reduced reliability of the digital feedwater system during a plant event on March 20, 2004.

This finding was more than minor because it effected the design control attributes of the Initiating Events cornerstone. Incorrectly specifying the design voltage resulted in reduced reliability of the digital feedwater control system which increased the likelihood of an event that upset plant stability during power operation. This finding was of very low safety significance, because one of two turbine driven feedwater pumps and one of three condensate and condensate booster pumps remained operable during the Unit 1 March 20, 2004, event. (Section 2.4)

Inspection Report# : 2004008*(pdf)*

Significance: G May 28, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Combustible Material Control in Unit 1 69' West Electrical Room
The team identified a non-cited violation of License Condtion 3.E, because Calvert Cliffs Nuclear Power Plant was not maintaining control of combustible materials in the Unit 1 69' West Electrical Room as described and approved in the safety evaluation report issued September 14, 1979.

Since the finding affected the initiating events cornerstone objective the finding is more than minor. The finding is of very low safety significance because the material was not located below cable trays carrying safety related cables and the material had been evaluated in the combustible loading calculations. (Section 1RO5.4)
Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Sep 29, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Brace Erected Scaffolding (Section 1R15)
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented during the construction of scaffolding erected in the vicinity of safety-related equipment. Specifically, on January 14, 2004, and again on September 14, 2004, the inspectors identified that scaffolding was constructed in close proximity to safety-related equipment without the required bracing. An engineering evaluation performed by the licensee, associated with the January 14, 2004 occurrence, determined that the scaffolding could aversely affect the safety-related 14A, 480 Vac electrical load center cooling function following a seismic event.

This finding is greater than minor because it was associated with the mitigating system cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Additionally, this finding is consistent with a greater than minor finding as described in NRC Manual Chapter 0612, Power Reactor Inspection Report, Appendix E, Example 4.a. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a phase 1 risk assessment performed in the reactor safety significance determination process. The inspectors identified that a contributing cause of this finding was related to the cross-cutting areas of Human Performance since plant procedures were not followed properly. (Section 1R15)

Inspection Report# : 2004006*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement planned, scheduled maintenance. (Section 4OA2)
The inspector identified a non-cited violation for failure to implement procedures to control maintenance activities required by Technical Specification 5.4.1.a. and Regulatory Guide 1.33. The licensee failed to implement procedures to ensure that planned, scheduled maintenance was actually being performed. Maintenance personnel, by procedure, are permitted to decide whether or not to clean and lubricate 480v breakers. If the maintenance personnel decide not to perform the scheduled clean and lubricate, no method is specified or available to report this situation to maintenance and engineering management.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480v electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. (Section 4OA2)
Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement design control measures for the 12 CC HX. (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, associated with a self-revealing finding, which requires that measures be established to assure that design basis are correctly translated into procedures. Specifically, the licensee failed to incorporate a design flow calculation into an operating procedure which allowed the licensee to operate the 12 component cooling water heat exchanger (CC HX) in excess of its maximum shell side flow versus time curves. This failure resulted in tube failures in the only available, and in-service CC HX which supported SDC operations of the RCS.

This finding is greater than minor because it affected an attribute and the objective of the Mitigating System Cornerstone in that inadequate procedure quality resulted in degraded availability, reliability and capability of a system that responds to initiating events to prevent undesirable consequences. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, this finding was determined to be of very low safety significance (Green) since the safety function of the component cooling water system was not lost. (Section 1R15)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate corrective actions for 480v breaker testing deficiency. (Section 4OA2)
The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to promptly correct a testing deficiency identified during a CX relay failure in 1998. When action was taken in October of 2001, it was not sufficient to prevent further CX relay failures in December 2003 and February 2004.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480 volt (v) electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. (Section 4OA2)

Inspection Report# : 2004005*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to provide protection in accordance with 10 CFR Part 50, Appendix R, Section III.G.2
The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2, because Calvert Cliffs Nuclear Power Plant utiilized manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection to the cables associated with that equipment, as required by the regulation.

In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection", (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonoable and are expected to meet the criteria outlined in the Enclosure 2 of inspection procedure 71111.05. (Section 1RO5.5)
Inspection Report# : 2004003*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: FIN Finding
Inadequate Breaker Coordination
The team identified a finding in that protective relay settings for the bustie circuit breakers for the 1A and OC emergency diesel generators were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480VAC load centers.

Because the finding affected the design control attribute of the mitigating systems cornerstone, it was more than minor. Since the issue did not result in an actual loss of a safety function of a single train of equipment, the issue was determined to be of very low safety significance.
Inspection Report# : 2004003*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Effective Corrective Actions Associated with Component Mispositioning Events
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions, which requires that measures shall be established to assure significant conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to implement effective corrective actions for significant conditions adverse to quality associated with component mispositioning events. A similar failure was first identified as NCV 05000317; 05000318/2003009-01 and documented in NRC Inspection Report IR-2003-009, issued November 7, 2003. Since then, two additional significant component mispositioning events occurred between October 29, 2003, and March 31, 2004 both resulting in actual consequences to safety-related systems.

This finding is greater than minor because it affects the Reactor Safety, Mitigating Systems attribute of human performance, and the availability, reliability, and capability objective of the mitigating systems cornerstone. This finding was of very low safety significance because none of the events resulted in the actual loss of a system safety function. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.
Inspection Report# : 2004004*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
HPSI Design Support/Seismic Structural Records not Retrievable (Section 1R21.b.1)
The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, related to the licensee's inability to retrieve records required to furnish evidence of the adequate performance of activities affecting the quality of the high pressure safety injection (hPSI) system. Specifically, quality records, identifiable with both the design change details for a Unit 2 HPSI pipe support snubber installation and the design calculations for the seismic adequacy for structural platforms in the refueling water tank (RWT) rooms in Units 1 & 2, were not retrievable.

The finding was evaluated using Manual Chapter 0612, Appendix E, example 1.b and determined to be more then mainor because the records were irretrievable lost. The finding wa associated with the attribute of design control (initial design, plant modifications). This issue is considered a very low safety significance finding because, while the required records were not retrievable, an as-built design review was conducted by the licensee which demonstrated the structural adequacy of the existinig field configurations (Section 1R21.b.1)
Inspection Report# : 2004002*(pdf)*

Significance: G Jan 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
High Pressure Safety Injection System Operation Outside of Design Basis (Section 1R21.b.2)
The team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for constellation Energy Group's (CEG) failure to correctly translate the emergency core cooling system (ECCS) design basis into the HPSI system operating instructions and procedures. Specifically, for shot durations during surveillance test activities, the HPSI loop isolation valve was placed in a condtion that could impact core cooling if the redundant train of HPSI were to fail.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (i.e., loss of coolant accidents) to prevent undersirable consequences (core damage). The finding was associated with the attribute of configuration control (operating equipment lineup). The finding was of very low safety significance because it represented the loss of single train of HPSI for less than the TS 3.5.2.A allowed outage time (72 hours) during each occurrence. (Section 1R21.b.2)
Inspection Report# : 2004002*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : March 09, 2005

Calvert Cliffs 1
1Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to assess and manage risk associated with Unit 1 RPS power supply replacement activities during reduced inventory. (Section 1R13)
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) which requires that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, the licensee failed to identify and therefore assess and manage the risks associated with performing maintenance on the 'B' channel of the reactor protection system (RPS) while operating in a reduced inventory condition. This maintenance activity resulted in the loss of one of the two shutdown cooling (SDC) operating trains for about 18 minutes with a corresponding heatup of the reactor coolant system (RCS) of 2 degrees Fahrenheit (F).

This finding is greater than minor because it affected an attribute and objective of the Initiating Event Cornerstone in that human performance inadequacies resulted in an event that upset plant stability during shutdown operations. This issue was evaluated in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, and was determined to be of very low safety significance. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Human Performance. (Section 1R13)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to comply with station work control procedures. (Section 3.4)
A self-revealing event identified a finding in that CCNPP did not follow procedural requirements in their risk assessment and control of the work on March 20, 2004, which resulted in an unanticipated reactor trip. Specifically, the provisions and controls of procedures NO-1-100, "Conduct of Operations," NO-1-117, "Integrated Risk Management," and MN-1-100, "Conduct of Maintenance," were not followed.

This finding was more than minor because the failures to follow station procedures affected the Initiating Events cornerstone in that the failure to properly risk-classify and control the work in the control room on March 20 lead to the reactor trip. This finding had very low safety significance because the finding did not represent an actual loss of a safety function, and was not potentially risk significant due to an external initiating event.

A contributing cause of the finding was related to the Human Performance cross-cutting area because CCNPP managers and staff did not properly implement station operations, risk management, and maintenance procedures. (Section 3.4)
Inspection Report# : 2004008*(pdf)*

Significance: G Jun 18, 2004
Identified By: Self Disclosing
Item Type: FIN Finding
Failure to adequately implement a modification design review of the digital feedwater control system. (Section 2.4)
A self-revealing finding of very low safety significance was identified because CCNPP failed to perform an adequate design review which resulted in reduced reliability of the digital feedwater system during a plant event on March 20, 2004.

This finding was more than minor because it effected the design control attributes of the Initiating Events cornerstone. Incorrectly specifying the design voltage resulted in reduced reliability of the digital feedwater control system which increased the likelihood of an event that upset plant stability during power operation. This finding was of very low safety significance, because one of two turbine driven feedwater pumps and one of three condensate and condensate booster pumps remained operable during the Unit 1 March 20, 2004, event. (Section 2.4)

Inspection Report# : 2004008*(pdf)*

Significance: G May 28, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Combustible Material Control in Unit 1 69' West Electrical Room
The team identified a non-cited violation of License Condtion 3.E, because Calvert Cliffs Nuclear Power Plant was not maintaining control of combustible materials in the Unit 1 69' West Electrical Room as described and approved in the safety evaluation report issued September 14, 1979.

Since the finding affected the initiating events cornerstone objective the finding is more than minor. The finding is of very low safety significance because the material was not located below cable trays carrying safety related cables and the material had been evaluated in the combustible loading calculations. (Section 1RO5.4)
Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Change SRW Operating Procedure During Sequencer Modification
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not included in all appropriate sections of the Unit 1 Operating Instruction, OI-15, "Service Water System." Specifically, certain procedural sections in OI -15 did not adhere to OI-15 precaution L, which prohibited the system to be in a configuration where two service water pumps could have loaded simultaneously onto a single emergency diesel generator (EDG). An engineering evaluation performed by the licensee, associated with the two pumps simultaneously loading onto an EDG, determined that this system alignment could have adversely affected the reliability of the safety-related Fairbanks Morse EDG following a loss of offsite power (LOOP) event concurrent with a loss of coolant accident (LOCA).

This finding is greater than minor because it was associated with the Mitigating System Cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 risk assessment performed in accordance with Inspection Manual Chapter - 0609, "Significance Determination Process." The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. The relevant causal factor was personnel because the Unit 1 service water procedures were not appropriately changed by operations procedure writers although a procedure revision was noted in the modification package as being required. (Section 1R15)

Inspection Report# : 2005002*(pdf)*

Significance: G Sep 29, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Brace Erected Scaffolding (Section 1R15)
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented during the construction of scaffolding erected in the vicinity of safety-related equipment. Specifically, on January 14, 2004, and again on September 14, 2004, the inspectors identified that scaffolding was constructed in close proximity to safety-related equipment without the required bracing. An engineering evaluation performed by the licensee, associated with the January 14, 2004 occurrence, determined that the scaffolding could aversely affect the safety-related 14A, 480 Vac electrical load center cooling function following a seismic event.

This finding is greater than minor because it was associated with the mitigating system cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Additionally, this finding is consistent with a greater than minor finding as described in NRC Manual Chapter 0612, Power Reactor Inspection Report, Appendix E, Example 4.a. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a phase 1 risk assessment performed in the reactor safety significance determination process. The inspectors identified that a contributing cause of this finding was related to the cross-cutting areas of Human Performance since plant procedures were not followed properly. (Section 1R15)

Inspection Report# : 2004006*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to implement planned, scheduled maintenance. (Section 4OA2)
The inspector identified a non-cited violation for failure to implement procedures to control maintenance activities required by Technical Specification 5.4.1.a. and Regulatory Guide 1.33. The licensee failed to implement procedures to ensure that planned, scheduled maintenance was actually being performed. Maintenance personnel, by procedure, are permitted to decide whether or not to clean and lubricate 480v breakers. If the maintenance personnel decide not to perform the scheduled clean and lubricate, no method is specified or available to report this situation to maintenance and engineering management.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480v electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. (Section 4OA2)
Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate corrective actions for 480v breaker testing deficiency. (Section 4OA2)
The inspector identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI. The licensee failed to promptly correct a testing deficiency identified during a CX relay failure in 1998. When action was taken in October of 2001, it was not sufficient to prevent further CX relay failures in December 2003 and February 2004.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affects the availability and reliability of the 480 volt (v) electrical distribution system. The finding is of very low safety significance because the finding did not represent an actual loss of safety function and did not screen as potentially risk significant due to a seismic, fire, flooding or severe weather initiating event. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. (Section 4OA2)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement design control measures for the 12 CC HX. (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, associated with a self-revealing finding, which requires that measures be established to assure that design basis are correctly translated into procedures. Specifically, the licensee failed to incorporate a design flow calculation into an operating procedure which allowed the licensee to operate the 12 component cooling water heat exchanger (CC HX) in excess of its maximum shell side flow versus time curves. This failure resulted in tube failures in the only available, and in-service CC HX which supported SDC operations of the RCS.

This finding is greater than minor because it affected an attribute and the objective of the Mitigating System Cornerstone in that inadequate procedure quality resulted in degraded availability, reliability and capability of a system that responds to initiating events to prevent undesirable consequences. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations SDP, this finding was determined to be of very low safety significance (Green) since the safety function of the component cooling water system was not lost. (Section 1R15)

Inspection Report# : 2004005*(pdf)*

Significance: G May 28, 2004
Identified By: NRC
Item Type: FIN Finding
Inadequate Breaker Coordination
The team identified a finding in that protective relay settings for the bustie circuit breakers for the 1A and OC emergency diesel generators were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480VAC load centers.

Because the finding affected the design control attribute of the mitigating systems cornerstone, it was more than minor. Since the issue did not result in an actual loss of a safety function of a single train of equipment, the issue was determined to be of very low safety significance.
Inspection Report# : 2004003*(pdf)*

Significance: G May 28, 2004

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to provide protection in accordance with 10 CFR Part 50, Appendix R, Section III.G.2
The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2, because Calvert Cliffs Nuclear Power Plant utiilized manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection to the cables associated with that equipment, as required by the regulation.

In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection", (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonoable and are expected to meet the criteria outlined in the Enclosure 2 of inspection procedure 71111.05. (Section 1RO5.5)
Inspection Report# : 2004003*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 17, 2005

Calvert Cliffs 1
2Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Change SRW Operating Procedure During Sequencer Modification
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not included in all appropriate sections of the Unit 1 Operating Instruction, OI-15, "Service Water System." Specifically, certain procedural sections in OI -15 did not adhere to OI-15 precaution L, which prohibited the system to be in a configuration where two service water pumps could have loaded simultaneously onto a single emergency diesel generator (EDG). An engineering evaluation performed by the licensee, associated with the two pumps simultaneously loading onto an EDG, determined that this system alignment could have adversely affected the reliability of the safety-related Fairbanks Morse EDG following a loss of offsite power (LOOP) event concurrent with a loss of coolant accident (LOCA).

This finding is greater than minor because it was associated with the Mitigating System Cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 risk assessment performed in accordance with Inspection Manual Chapter - 0609, "Significance Determination Process." The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. The relevant causal factor was personnel because the Unit 1 service water procedures were not appropriately changed by operations procedure writers although a procedure revision was noted in the modification package as being required. (Section 1R15)

Inspection Report# : 2005002*(pdf)*

Significance: G Sep 29, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Brace Erected Scaffolding (Section 1R15)
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented during the construction of scaffolding erected in the vicinity of safety-related equipment. Specifically, on January 14, 2004, and again on September 14, 2004, the inspectors identified that scaffolding was constructed in close proximity to safety-related equipment without the required bracing. An engineering evaluation performed by the licensee, associated with the January 14, 2004 occurrence, determined that the scaffolding could aversely affect the safety-related 14A, 480 Vac electrical load center cooling function following a seismic event.

This finding is greater than minor because it was associated with the mitigating system cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Additionally, this finding is consistent with a greater than minor finding as described in NRC Manual Chapter 0612, Power Reactor Inspection Report, Appendix E, Example 4.a. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a phase 1 risk assessment performed in the reactor safety significance determination process. The inspectors identified that a contributing cause of this finding was related to the cross-cutting areas of Human Performance since plant procedures were not followed properly. (Section 1R15)

Inspection Report# : 2004006*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : August 24, 2005

Calvert Cliffs 1
3Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Offsite Power Availability
The inspectors identified an NCV of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." for the failure to provide an adequate procedure for the operation of the electrical system. Specifically, Operating Procedure OI-27-B, 13.8kV System, provides steps for placing voltage regulators under manual control which makes the associated offsite source to the affected 4 kV busses inoperable. The procedure did not state this, and as a result, when the voltage regulators were placed in manual the associated offsite source was not declared inoperable when it should have been.

This finding is greater than minor because it is associated with the cornerstone attribute Procedure Quality and affects the objective of the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be a finding of very low safety significance because the finding did not represent an actual loss of a safety function and was not potentially risk significant due to an external initiating event. (Section 4OA2)

Inspection Report# : 2005004*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Change SRW Operating Procedure During Sequencer Modification
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not included in all appropriate sections of the Unit 1 Operating Instruction, OI-15, "Service Water System." Specifically, certain procedural sections in OI -15 did not adhere to OI-15 precaution L, which prohibited the system to be in a configuration where two service water pumps could have loaded simultaneously onto a single emergency diesel generator (EDG). An engineering evaluation performed by the licensee, associated with the two pumps simultaneously loading onto an EDG, determined that this system alignment could have adversely affected the reliability of the safety-related Fairbanks Morse EDG following a loss of offsite power (LOOP) event concurrent with a loss of coolant accident (LOCA).

This finding is greater than minor because it was associated with the Mitigating System Cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 risk assessment performed in accordance with Inspection Manual Chapter - 0609, "Significance Determination Process." The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. The relevant causal factor was personnel because the Unit 1 service water procedures were not appropriately changed by operations procedure writers although a procedure revision was noted in the modification package as being required. (Section 1R15)

Inspection Report# : 2005002*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : November 30, 2005

Calvert Cliffs 1
4Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Oct 26, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Establish Adequate Clearance Order Boundaries
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented while establishing boundaries to perform maintenance activities. Specifically, on October 26, 2005, while hanging a clearance to support the replacement of 1-SV-3828, 11 shutdown cooling (SDC) outlet control valve (CV) solenoid valve, component cooling water flow to the Unit 1 containment components was reduced which adversely impacted the reactor coolant pumps due to the increased temperatures associated with the upper and lower guide bearings as well as the lower reactor coolant pump (RCP) seal. A misunderstanding as to how this clearance interacted with a previously established clearance lead to this event. The licensee restored component cooling water flow and corrected the sequencing of these clearances and maintenance activities to ensure plant stability was maintained. The licensee documented this occurrence in their corrective action program.

This finding is greater than minor because it was associated with the Initiating Events Cornerstone configuration control attribute and affected the cornerstone's objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance (Green), because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. Specifically, the licensed operators did not follow plant procedures and determine if boundaries specified in the clearance order were adequate for the maintenance activity based on the actual plant conditions that existed at the time the clearance was to be implemented. (Section 1R04)
Inspection Report# : 2005005*(pdf)*

Mitigating Systems

Significance: G Nov 18, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct unavailability problems for the turbine drive AFW pump.
The NRC identified a Green non-cited violation (NCV) of Technical Specification (TS) 5.4.1 due to an inadequate procedure for installation and adjustment of packing for the 22 turbine-driven auxiliary feedwater (TDAFW) pump, which led to premature pump shutdown during a quarterly surveillance test. During the test, operators secured the pump when they noticed a burning smell and observed smoke coming from the pump's inboard packing gland. Investigation found the inboard packing gland had lost adequate leak off flow along its inner diameter. The licensee entered the deficiency with the pump overhaul procedure into their corrective action (CA) program for resolution.

This finding was greater than minor because it adversely affected the availability of a safety-related TDAFW pump which affected the equipment performance attribute of the Mitigating Systems Cornerstone because the pump was unavailable until the degraded packing had been replaced and the pump was satisfactorily retested. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," because an engineering analysis determined that the pump would have remained operable, and was capable of performing its intended safety function. (Section 4OA2.2)

Inspection Report# : 2005007*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Offsite Power Availability
The inspectors identified an NCV of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." for the failure to provide an adequate procedure for the operation of the electrical system. Specifically, Operating Procedure OI-27-B, 13.8kV System, provides steps for placing voltage regulators under manual control which makes the associated offsite source to the affected 4 kV busses

inoperable. The procedure did not state this, and as a result, when the voltage regulators were placed in manual the associated offsite source was not declared inoperable when it should have been.

This finding is greater than minor because it is associated with the cornerstone attribute Procedure Quality and affects the objective of the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be a finding of very low safety significance because the finding did not represent an actual loss of a safety function and was not potentially risk significant due to an external initiating event. (Section 4OA2)

Inspection Report# : 2005004*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Change SRW Operating Procedure During Sequencer Modification
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not included in all appropriate sections of the Unit 1 Operating Instruction, OI-15, "Service Water System." Specifically, certain procedural sections in OI -15 did not adhere to OI-15 precaution L, which prohibited the system to be in a configuration where two service water pumps could have loaded simultaneously onto a single emergency diesel generator (EDG). An engineering evaluation performed by the licensee, associated with the two pumps simultaneously loading onto an EDG, determined that this system alignment could have adversely affected the reliability of the safety-related Fairbanks Morse EDG following a loss of offsite power (LOOP) event concurrent with a loss of coolant accident (LOCA).

This finding is greater than minor because it was associated with the Mitigating System Cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 risk assessment performed in accordance with Inspection Manual Chapter - 0609, "Significance Determination Process." The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. The relevant causal factor was personnel because the Unit 1 service water procedures were not appropriately changed by operations procedure writers although a procedure revision was noted in the modification package as being required. (Section 1R15)

Inspection Report# : 2005002*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 18, 2005
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team determined that Constellation's Calvert Cliffs (CC) Units 1 and 2 Nuclear Power Plants were effective at identifying problems and entering them into the corrective action program (CAP). Relatively few deficiencies were identified by external organizations (including NRC) that had not been previously identified by the licensee. Audits and self-assessments were generally thorough. Once entered into the CAP, issues were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were also properly evaluated commensurate with their safety significance. The causal evaluations for equipment and performance issues were complete, and proposed corrective actions that addressed the identified causes. Corrective actions were generally effective and typically implemented in a timely manner. On the basis of interviews conducted during the inspection, workers at the station felt free to raise safety issues and were willing to enter them into the corrective action program. However, an ineffective maintenance procedure adversely impacted the availability of an auxiliary feedwater pump.
Inspection Report# : 2005007*(pdf)*

Last modified : March 03, 2006

Calvert Cliffs 1
1Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish adequate physical boundaries for RCP maintenance
Green. A self-revealing non-cited violation of Technical Specification 5.4.1 occurred when requirements contained in plant procedure NO-1-112, Safety Tagging, were not adequately implemented prior to maintenance on the 12A reactor coolant pump. Specifically, on February 22, 2006, while in Mode 5, a component cooling water system containment isolation valve was stroked open while performing a surveillance test which resulted in a level decrease of about 20 inches in the component cooling water head tank. The cause of the event was due to an incomplete tagout boundary which had been established for the 12A reactor coolant pump seal replacement maintenance activity. The licensee documented this performance deficiency in their corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that licensed operators did not establish adequate tagout boundaries.
.
This finding was more than minor because it was associated with the Initiating Event Cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The event did not involve an actual loss of shutdown cooling (SDC). As a result, this finding was determined to be of very low safety significance (Green) in accordance with a risk assessment performed using the NRC Inspection Manual Chapter (IMC)0609, "Significance Determination Process," Appendix G, "Shutdown Operations". (Section 1R20)

Inspection Report# : 2006002*(pdf)*

Significance: G Oct 26, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Establish Adequate Clearance Order Boundaries
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented while establishing boundaries to perform maintenance activities. Specifically, on October 26, 2005, while hanging a clearance to support the replacement of 1-SV-3828, 11 shutdown cooling (SDC) outlet control valve (CV) solenoid valve, component cooling water flow to the Unit 1 containment components was reduced which adversely impacted the reactor coolant pumps due to the increased temperatures associated with the upper and lower guide bearings as well as the lower reactor coolant pump (RCP) seal. A misunderstanding as to how this clearance interacted with a previously established clearance lead to this event. The licensee restored component cooling water flow and corrected the sequencing of these clearances and maintenance activities to ensure plant stability was maintained. The licensee documented this occurrence in their corrective action program.

This finding is greater than minor because it was associated with the Initiating Events Cornerstone configuration control attribute and affected the cornerstone's objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance (Green), because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. Specifically, the licensed operators did not follow plant procedures and determine if boundaries specified in the clearance order were adequate for the maintenance activity based on the actual plant conditions that existed at the time the clearance was to be implemented. (Section 1R04)
Inspection Report# : 2005005*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Evaluation for Repetitive Functional Failures
The inspectors identified a non-cited violation (NCV) of 10CFR50.65 ("the Maintenance Rule") paragraph (a)(2) in that the licensee failed to

demonstrate that the performance of service water turbine building isolation valves were being effectively controlled through preventive maintenance. The licensee did not fully evaluate repetitive valve test failures and their impact on the performance demonstration that justified monitoring under paragraph (a)(2) of the Maintenance Rule. Upon evaluation, the licensee determined that the repetitive functional failures should have caused the effected valves to be monitored in accordance with Maintenance Rule paragraph (a)(1) requirements. The licensee entered the performance deficiency regarding Maintenance Rule program implementation into their corrective action program for resolution. Specific corrective actions were taken to address the individual valve test failures when they occurred. The inspector identified that a contributing cause of this finding was related to the cross-cutting area of human performance due to the incorrect performance determination by plant staff.

This finding is greater than minor, because it affected the reliability objective of the Equipment Performance attribute under the Mitigating Systems Cornerstone. Specifically, the licensee did not demonstrate effective control of the performance of the isolation valves by failing to place the affected structure, system, component (SSC) in a Maintenance Rule (a)(1) category due to its failure to demonstrate acceptable performance. The finding is of very low safety significance, because the isolation valve failures did not result in a loss of operability, did not represent a loss of a system or train safety function, and did not involve an external event. Specifically, the service water isolation capability was maintained due to the operability of redundant isolation valves that are in series with the valves that failed. (Section 1R12)

Inspection Report# : 2006002*(pdf)*

Significance: G Nov 18, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct unavailability problems for the turbine drive AFW pump.
The NRC identified a Green non-cited violation (NCV) of Technical Specification (TS) 5.4.1 due to an inadequate procedure for installation and adjustment of packing for the 22 turbine-driven auxiliary feedwater (TDAFW) pump, which led to premature pump shutdown during a quarterly surveillance test. During the test, operators secured the pump when they noticed a burning smell and observed smoke coming from the pump's inboard packing gland. Investigation found the inboard packing gland had lost adequate leak off flow along its inner diameter. The licensee entered the deficiency with the pump overhaul procedure into their corrective action (CA) program for resolution.

This finding was greater than minor because it adversely affected the availability of a safety-related TDAFW pump which affected the equipment performance attribute of the Mitigating Systems Cornerstone because the pump was unavailable until the degraded packing had been replaced and the pump was satisfactorily retested. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," because an engineering analysis determined that the pump would have remained operable, and was capable of performing its intended safety function. (Section 4OA2.2)

Inspection Report# : 2005007*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Offsite Power Availability
The inspectors identified an NCV of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." for the failure to provide an adequate procedure for the operation of the electrical system. Specifically, Operating Procedure OI-27-B, 13.8kV System, provides steps for placing voltage regulators under manual control which makes the associated offsite source to the affected 4 kV busses inoperable. The procedure did not state this, and as a result, when the voltage regulators were placed in manual the associated offsite source was not declared inoperable when it should have been.

This finding is greater than minor because it is associated with the cornerstone attribute Procedure Quality and affects the objective of the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be a finding of very low safety significance because the finding did not represent an actual loss of a safety function and was not potentially risk significant due to an external initiating event. (Section 4OA2)

Inspection Report# : 2005004*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly control access to a high radiation area
Green. A self-revealing non-cited violation (NCV) associated with the alternate access control requirements established in accordance with 10 CFR 20.1601 (c), was identified. Specifically, the licensee failed to control and properly post a high radiation area with dose rates greater than 1,000 millirems per hour. On January18, 2006, a nondestructive examination (NDE) worker's electronic personnel dosimeter unexpectedly alarmed when the worker was exposed to unanticipated radiation levels of up to approximately 3,000millirems per hour. The area was not adequately surveyed by a radiation protection technician to establish the dose rate levels in the area and to properly post the area, and the worker was not made aware of the actual dose rate levels prior to entry into the area while wearing an alarming electronic personnel dosimeter. The licensee determined that the worker received less than ten millirems. This performance deficiency was entered into the licensee's corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that access to a high radiation area was not properly controlled.

This finding is more than minor because it is associated with the Occupational Radiation Safety attribute of exposure control and affected the cornerstone objective in that not controlling the locked high radiation area could increase personal exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve: (1)as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. (Section 2OS1)

Inspection Report# : 2006002*(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 18, 2005
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team determined that Constellation's Calvert Cliffs (CC) Units 1 and 2 Nuclear Power Plants were effective at identifying problems and entering them into the corrective action program (CAP). Relatively few deficiencies were identified by external organizations (including NRC) that had not been previously identified by the licensee. Audits and self-assessments were generally thorough. Once entered into the CAP, issues were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were also properly evaluated commensurate with their safety significance. The causal evaluations for equipment and performance issues were complete, and proposed corrective actions that addressed the identified causes. Corrective actions were generally effective and typically implemented in a timely manner. On the basis of interviews conducted during the inspection, workers at the station felt free to raise safety issues and were willing to enter them into the corrective action program. However, an ineffective maintenance procedure adversely impacted the availability of an auxiliary feedwater pump.
Inspection Report# : 2005007*(pdf)*

Last modified : May 25, 2006

Calvert Cliffs 1
2Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish adequate physical boundaries for RCP maintenance
Green. A self-revealing non-cited violation of Technical Specification 5.4.1 occurred when requirements contained in plant procedure NO-1-112, Safety Tagging, were not adequately implemented prior to maintenance on the 12A reactor coolant pump. Specifically, on February 22, 2006, while in Mode 5, a component cooling water system containment isolation valve was stroked open while performing a surveillance test which resulted in a level decrease of about 20 inches in the component cooling water head tank. The cause of the event was due to an incomplete tagout boundary which had been established for the 12A reactor coolant pump seal replacement maintenance activity. The licensee documented this performance deficiency in their corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that licensed operators did not establish adequate tagout boundaries.
.
This finding was more than minor because it was associated with the Initiating Event Cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The event did not involve an actual loss of shutdown cooling (SDC). As a result, this finding was determined to be of very low safety significance (Green) in accordance with a risk assessment performed using the NRC Inspection Manual Chapter (IMC)0609, "Significance Determination Process," Appendix G, "Shutdown Operations". (Section 1R20)

Inspection Report# : 2006002*(pdf)*

Significance: G Oct 26, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Establish Adequate Clearance Order Boundaries
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented while establishing boundaries to perform maintenance activities. Specifically, on October 26, 2005, while hanging a clearance to support the replacement of 1-SV-3828, 11 shutdown cooling (SDC) outlet control valve (CV) solenoid valve, component cooling water flow to the Unit 1 containment components was reduced which adversely impacted the reactor coolant pumps due to the increased temperatures associated with the upper and lower guide bearings as well as the lower reactor coolant pump (RCP) seal. A misunderstanding as to how this clearance interacted with a previously established clearance lead to this event. The licensee restored component cooling water flow and corrected the sequencing of these clearances and maintenance activities to ensure plant stability was maintained. The licensee documented this occurrence in their corrective action program.

This finding is greater than minor because it was associated with the Initiating Events Cornerstone configuration control attribute and affected the cornerstone's objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance (Green), because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. Specifically, the licensed operators did not follow plant procedures and determine if boundaries specified in the clearance order were adequate for the maintenance activity based on the actual plant conditions that existed at the time the clearance was to be implemented. (Section 1R04)
Inspection Report# : 2005005*(pdf)*

Mitigating Systems

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish reference values or reconfirm previous values following maintenance that affected reference values of the AFW and ECCS pumps
The inspectors identified a non-cited violation of 10 CFR 50.55a, Codes and Standards, because the licensee did not establish new reference values or reconfirm the previous reference values following maintenance that affected hydraulic or mechanical parameters on the auxiliary feedwater

(AFW) and emergency core cooling system (ECCS) pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for inservice testing. The licensee entered this issue into their corrective action program as IRE-014-764. The planned corrective action include a review of maintenance and IST data to determine whether new reference values are needed or reconfirm existing reference values for the AFW and ECCS pumps.

This finding is more than minor because the same issue affected a number of safety-related pumps tested and the issue was repetitive. The finding has a very low safety significance because the condition did not result in an actual failure of the AFW and ECCS pumps, or result in systems being declared inoperable for greater than their allowed technical specification outage time. A contributing cause of the finding is related to the cross-cutting aspect in the area of problem identification and resolution because the licensee did not periodically trend and assess information to identify programmatic and common cause problems.

Inspection Report# : 2006003*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Evaluation for Repetitive Functional Failures
The inspectors identified a non-cited violation (NCV) of 10CFR50.65 ("the Maintenance Rule") paragraph (a)(2) in that the licensee failed to demonstrate that the performance of service water turbine building isolation valves were being effectively controlled through preventive maintenance. The licensee did not fully evaluate repetitive valve test failures and their impact on the performance demonstration that justified monitoring under paragraph (a)(2) of the Maintenance Rule. Upon evaluation, the licensee determined that the repetitive functional failures should have caused the effected valves to be monitored in accordance with Maintenance Rule paragraph (a)(1) requirements. The licensee entered the performance deficiency regarding Maintenance Rule program implementation into their corrective action program for resolution. Specific corrective actions were taken to address the individual valve test failures when they occurred. The inspector identified that a contributing cause of this finding was related to the cross-cutting area of human performance due to the incorrect performance determination by plant staff.

This finding is greater than minor, because it affected the reliability objective of the Equipment Performance attribute under the Mitigating Systems Cornerstone. Specifically, the licensee did not demonstrate effective control of the performance of the isolation valves by failing to place the affected structure, system, component (SSC) in a Maintenance Rule (a)(1) category due to its failure to demonstrate acceptable performance. The finding is of very low safety significance, because the isolation valve failures did not result in a loss of operability, did not represent a loss of a system or train safety function, and did not involve an external event. Specifically, the service water isolation capability was maintained due to the operability of redundant isolation valves that are in series with the valves that failed. (Section 1R12)

Inspection Report# : 2006002*(pdf)*

Significance: G Nov 18, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct unavailability problems for the turbine drive AFW pump.
The NRC identified a Green non-cited violation (NCV) of Technical Specification (TS) 5.4.1 due to an inadequate procedure for installation and adjustment of packing for the 22 turbine-driven auxiliary feedwater (TDAFW) pump, which led to premature pump shutdown during a quarterly surveillance test. During the test, operators secured the pump when they noticed a burning smell and observed smoke coming from the pump's inboard packing gland. Investigation found the inboard packing gland had lost adequate leak off flow along its inner diameter. The licensee entered the deficiency with the pump overhaul procedure into their corrective action (CA) program for resolution.

This finding was greater than minor because it adversely affected the availability of a safety-related TDAFW pump which affected the equipment performance attribute of the Mitigating Systems Cornerstone because the pump was unavailable until the degraded packing had been replaced and the pump was satisfactorily retested. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," because an engineering analysis determined that the pump would have remained operable, and was capable of performing its intended safety function. (Section 4OA2.2)

Inspection Report# : 2005007*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Offsite Power Availability
The inspectors identified an NCV of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." for the failure to provide an adequate procedure for the operation of the electrical system. Specifically, Operating Procedure OI-27-B, 13.8kV System, provides steps for placing voltage regulators under manual control which makes the associated offsite source to the affected 4 kV busses inoperable. The procedure did not state this, and as a result, when the voltage regulators were placed in manual the associated offsite source was not declared inoperable when it should have been.

This finding is greater than minor because it is associated with the cornerstone attribute Procedure Quality and affects the objective of the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be a finding of very low safety significance because the finding did not represent an actual loss of a safety function and was not potentially risk significant due to an external initiating event. (Section 4OA2)

Inspection Report# : 2005004*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly control access to a high radiation area
Green. A self-revealing non-cited violation (NCV) associated with the alternate access control requirements established in accordance with 10 CFR 20.1601 (c), was identified. Specifically, the licensee failed to control and properly post a high radiation area with dose rates greater than 1,000 millirems per hour. On January18, 2006, a nondestructive examination (NDE) worker's electronic personnel dosimeter unexpectedly alarmed when the worker was exposed to unanticipated radiation levels of up to approximately 3,000millirems per hour. The area was not adequately surveyed by a radiation protection technician to establish the dose rate levels in the area and to properly post the area, and the worker was not made aware of the actual dose rate levels prior to entry into the area while wearing an alarming electronic personnel dosimeter. The licensee determined that the worker received less than ten millirems. This performance deficiency was entered into the licensee's corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that access to a high radiation area was not properly controlled.

This finding is more than minor because it is associated with the Occupational Radiation Safety attribute of exposure control and affected the cornerstone objective in that not controlling the locked high radiation area could increase personal exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve: (1)as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. (Section 2OS1)

Inspection Report# : 2006002*(pdf)*

Public Radiation Safety

Significance: G Dec 21, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform an adequate survey for radioactivity
The inspectors identified a non-cited violation of 10 CFR 20.1501 for failure to make surveys of the radioactivity in a "sink hole" to assure compliance with 10 CFR 20.1301(a)(1) regarding the total effective dose equivalent limit for individual members of the public from licensed operations, specifically regarding assessing dose for batch releases of liquid radioactive waste and assessing annual dose.

This violation is more than minor because it is associated with the cornerstone attribute of maintaining a program and process to estimate offsite dose due to abnormal releases and to record and report on such releases and because it affected the Radiation Safety/Public Radiation Safety Cornerstone's objective to ensure the adequate protection of public health and safety from exposure to radioactive materials released into the public domain. The violation is of very low significance because, while it did impair the licensee's ability to assess the timing of dose consequence and the accuracy of the batch and annual effluent release dose records and reports due to the large difference in transit times for the permitted and non-permitted discharge pathways to the bay, the licensee did account for all released radioactivity and did assess the cumulative doses from their

effluent releases. Additionally, the violation is of very low significance because the involved radioactivity had been addressed in licensee permits prior to release, the unanalyzed non-permitted pathway (i.e., via groundwater to the bay) did not impact private property, the dose consequences would not differ significantly from those calculated in the licensee's release permits, and the assessed doses did not exceed the dose values in Appendix I to 10 CFR 50.

Inspection Report# : 2006003*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 18, 2005
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team determined that Constellation's Calvert Cliffs (CC) Units 1 and 2 Nuclear Power Plants were effective at identifying problems and entering them into the corrective action program (CAP). Relatively few deficiencies were identified by external organizations (including NRC) that had not been previously identified by the licensee. Audits and self-assessments were generally thorough. Once entered into the CAP, issues were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were also properly evaluated commensurate with their safety significance. The causal evaluations for equipment and performance issues were complete, and proposed corrective actions that addressed the identified causes. Corrective actions were generally effective and typically implemented in a timely manner. On the basis of interviews conducted during the inspection, workers at the station felt free to raise safety issues and were willing to enter them into the corrective action program. However, an ineffective maintenance procedure adversely impacted the availability of an auxiliary feedwater pump.
Inspection Report# : 2005007*(pdf)*

Last modified : August 25, 2006

Calvert Cliffs 1
3Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish adequate physical boundaries for RCP maintenance
Green. A self-revealing non-cited violation of Technical Specification 5.4.1 occurred when requirements contained in plant procedure NO-1-112, Safety Tagging, were not adequately implemented prior to maintenance on the 12A reactor coolant pump. Specifically, on February 22, 2006, while in Mode 5, a component cooling water system containment isolation valve was stroked open while performing a surveillance test which resulted in a level decrease of about 20 inches in the component cooling water head tank. The cause of the event was due to an incomplete tagout boundary which had been established for the 12A reactor coolant pump seal replacement maintenance activity. The licensee documented this performance deficiency in their corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that licensed operators did not establish adequate tagout boundaries.
.
This finding was more than minor because it was associated with the Initiating Event Cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The event did not involve an actual loss of shutdown cooling (SDC). As a result, this finding was determined to be of very low safety significance (Green) in accordance with a risk assessment performed using the NRC Inspection Manual Chapter (IMC)0609, "Significance Determination Process," Appendix G, "Shutdown Operations". (Section 1R20)

Inspection Report# : 2006002*(pdf)*

Significance: G Oct 26, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Establish Adequate Clearance Order Boundaries
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented while establishing boundaries to perform maintenance activities. Specifically, on October 26, 2005, while hanging a clearance to support the replacement of 1-SV-3828, 11 shutdown cooling (SDC) outlet control valve (CV) solenoid valve, component cooling water flow to the Unit 1 containment components was reduced which adversely impacted the reactor coolant pumps due to the increased temperatures associated with the upper and lower guide bearings as well as the lower reactor coolant pump (RCP) seal. A misunderstanding as to how this clearance interacted with a previously established clearance lead to this event. The licensee restored component cooling water flow and corrected the sequencing of these clearances and maintenance activities to ensure plant stability was maintained. The licensee documented this occurrence in their corrective action program.

This finding is greater than minor because it was associated with the Initiating Events Cornerstone configuration control attribute and affected the cornerstone's objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance (Green), because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors identified that a contributing cause of this finding was related to the cross-cutting area of human performance. Specifically, the licensed operators did not follow plant procedures and determine if boundaries specified in the clearance order were adequate for the maintenance activity based on the actual plant conditions that existed at the time the clearance was to be implemented. (Section 1R04)
Inspection Report# : 2005005*(pdf)*

Mitigating Systems

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS for SRW and AFW with Watertight Doors Open
The Inspectors identified a non-cited violation (NCV) for the Service Water (SRW) and Auxiliary Feedwater (AFW) systems being inoperable without completing the actions required by Technicial Specifications. Constellation did not declare AFW and SRW trains inoperable when water tight doors providing a High Energy Line Break (HELB) carrier were opened for maintenance or testing. Station personnel wrote condition report (CR) IRE-016-870 to address the control of these HELB barriers and have provided guidance to declare the trains inoperable if the water tight doors are open.

This finding is more than minor because it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component availability during design basis events, specifically HELBs. The SDP phase 1 review determined a phase 1 evaluation was required since both SRW and AFW subsystems could have been impacted with the HELB barrier removed. The phase 2 evaluation yielded a very low safety significance (Green) because of the low exposure time when the watertight doors were open. A contributing cause of the finding is related to the cross cutting aspect in the area of problem identification and resolution (PI&R) because Constellation did not implement and institutionalize operating experience (OE) related to control of the HELB barriers through changes to station processes or procedures. (Section 1R15)
Inspection Report# : 2006004*(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS 5.4.1 for Salt Water Strainers
The inspectors identified a NCV of TS 5.4.1.a because Constellation did not initiate a condition report (CR) to document the adverse performance of the service water (SRW) heat exchanger salt water (SW) strainers during high debris loading as required in the Service Water Heat Exchanger Alarm Manual. Constellation also did not assess the operability of the strainers as required by the Corrective Action Program. Station personnel initiated CR IRE-017-018 to address the issue and assess operability of the strainers.

The finding was more than minor since it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component reliability during design basis events where the SRW system was required. This finding was determined to be a finding of very low safety significance (green) because only one subsystem of the SRW system was inoperable at any time and the subsystem inoperability time was less than the maximum allowed by TS. A contributing cause of this finding was related to the cross-cutting aspect of PI&R because Constellation did not implement the corrective action program with a low threshold for identifying the problems with the SRW heat exchanger SW strainers. (Section 4OA2)
Inspection Report# : 2006004*(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish reference values or reconfirm previous values following maintenance that affected reference values of the AFW and ECCS pumps
The inspectors identified a non-cited violation of 10 CFR 50.55a, Codes and Standards, because the licensee did not establish new reference values or reconfirm the previous reference values following maintenance that affected hydraulic or mechanical parameters on the auxiliary feedwater (AFW) and emergency core cooling system (ECCS) pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for inservice testing. The licensee entered this issue into their corrective action program as IRE-014-764. The planned corrective action include a review of maintenance and IST data to determine whether new reference values are needed or reconfirm existing reference

values for the AFW and ECCS pumps.

This finding is more than minor because the same issue affected a number of safety-related pumps tested and the issue was repetitive. The finding has a very low safety significance because the condition did not result in an actual failure of the AFW and ECCS pumps, or result in systems being declared inoperable for greater than their allowed technical specification outage time. A contributing cause of the finding is related to the cross-cutting aspect in the area of problem identification and resolution because the licensee did not periodically trend and assess information to identify programmatic and common cause problems.

Inspection Report# : 2006003*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Evaluation for Repetitive Functional Failures
The inspectors identified a non-cited violation (NCV) of 10CFR50.65 ("the Maintenance Rule") paragraph (a)(2) in that the licensee failed to demonstrate that the performance of service water turbine building isolation valves were being effectively controlled through preventive maintenance. The licensee did not fully evaluate repetitive valve test failures and their impact on the performance demonstration that justified monitoring under paragraph (a)(2) of the Maintenance Rule. Upon evaluation, the licensee determined that the repetitive functional failures should have caused the effected valves to be monitored in accordance with Maintenance Rule paragraph (a)(1) requirements. The licensee entered the performance deficiency regarding Maintenance Rule program implementation into their corrective action program for resolution. Specific corrective actions were taken to address the individual valve test failures when they occurred. The inspector identified that a contributing cause of this finding was related to the cross-cutting area of human performance due to the incorrect performance determination by plant staff.

This finding is greater than minor, because it affected the reliability objective of the Equipment Performance attribute under the Mitigating Systems Cornerstone. Specifically, the licensee did not demonstrate effective control of the performance of the isolation valves by failing to place the affected structure, system, component (SSC) in a Maintenance Rule (a)(1) category due to its failure to demonstrate acceptable performance. The finding is of very low safety significance, because the isolation valve failures did not result in a loss of operability, did not represent a loss of a system or train safety function, and did not involve an external event. Specifically, the service water isolation capability was maintained due to the operability of redundant isolation valves that are in series with the valves that failed. (Section 1R12)

Inspection Report# : 2006002*(pdf)*

Significance: W Mar 24, 2006
Identified By: Self-Revealing
Item Type: VIO Violation
Failure to Adequately Control the Design of the Setpoints for “1A” EDG Feeder Breaker for Essential EDG Support Systems
A violation of 10 CFR 50, Appendix B, Criterion III (Design Control) was identified involving the failure to ensure an adequate trip setpoint for the electrical circuit breaker that supplies the “1A” EDG support systems. An SDP Phase 3 risk analysis determined that the failure to account for possible combinations of “1A” EDG support equipment operation in the short-time over-current trip setpoint for the supply breaker to 1MCC123 was preliminarily of low to moderate safety significance. Specifically, the short-time over-current trip setpoint was set too low and it did not account for the in-rush current associated with the possible combinations of equipment that could start and operate to support the “1A” EDG following a loss of offsite power (LOOP). This low setpoint, combined with normal setpoint drift, resulted in substantial periods where the “1A” EDG would not have been able to perform its safety function, because the support system supply circuit breaker would have tripped open inappropriately. Calvert Cliffs took immediate action to correct the breaker setpoint and evaluate other potential deficiencies of a similar nature. This issue was entered into the corrective action program at Calvert Cliffs for resolution.

The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems (i.e., emergency AC power) that respond to initiating events to prevent undesirable consequences, and its related attribute for design control. The "0C" Station Blackout Diesel Generator (a non-safety related, but risk-important power source) and the breaker for its support systems were similarly affected by the performance deficiency. SDP Phase 1, Phase 2, and Phase 3 assessments were used to evaluate the risk significance of this finding. The Phase 1 screening required performance of a Phase 2 evaluation because the finding represented a loss of safety function of a single train, for greater than its allowed outage time. The Technical Specification (TS) allowed outage time is 14 days for a single EDG. To assess the full significance both the Phase 2 and Phase 3 analyzes assumed a 5407 hour exposure for the "1A" EDG being unable to perform its safety function and an additional 6.7 hours where both the "1A" EDG and the "0C" DG would not have been able to perform their required functions (the "0C" EDG had less instrument drift). The Region I senior reactor analyst (SRA) conducted a Phase 3 Risk Assessment, to refine the Phase 2 analysis and to incorporate external events and recovery credit. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, determined a ?CDF of approximately 1 in 150,000 years of operation (mid E-6 per year range) for both internal and external events, with no associated increase in large early release frequency (LERF). The risk of the "1A" EDG exposure time dominated the analysis by several orders of magnitude over the risk of the concurrent "1A" EDG and "0C" DG exposure time. A large fire in the turbine building, which causes a loss of offsite power, was the dominating initiating event.

Inspection Report# : 2006012*(pdf)*

Significance: G Nov 18, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct unavailability problems for the turbine drive AFW pump.
The NRC identified a Green non-cited violation (NCV) of Technical Specification (TS) 5.4.1 due to an inadequate procedure for installation and adjustment of packing for the 22 turbine-driven auxiliary feedwater (TDAFW) pump, which led to premature pump shutdown during a quarterly surveillance test. During the test, operators secured the pump when they noticed a burning smell and observed smoke coming from the pump's inboard packing gland. Investigation found the inboard packing gland had lost adequate leak off flow along its inner diameter. The licensee entered the deficiency with the pump overhaul procedure into their corrective action (CA) program for resolution.

This finding was greater than minor because it adversely affected the availability of a safety-related TDAFW pump which affected the equipment performance attribute of the Mitigating Systems Cornerstone because the pump was unavailable until the degraded packing had been replaced and the pump was satisfactorily retested. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," because an engineering analysis determined that the pump would have remained operable, and was capable of performing its intended safety function. (Section 4OA2.2)

Inspection Report# : 2005007*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2006

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly control access to a high radiation area
Green. A self-revealing non-cited violation (NCV) associated with the alternate access control requirements established in accordance with 10 CFR 20.1601 (c), was identified. Specifically, the licensee failed to control and properly post a high radiation area with dose rates greater than 1,000 millirems per hour. On January18, 2006, a nondestructive examination (NDE) worker's electronic personnel dosimeter unexpectedly alarmed when the worker was exposed to unanticipated radiation levels of up to approximately 3,000millirems per hour. The area was not adequately surveyed by a radiation protection technician to establish the dose rate levels in the area and to properly post the area, and the worker was not made aware of the actual dose rate levels prior to entry into the area while wearing an alarming electronic personnel dosimeter. The licensee determined that the worker received less than ten millirems. This performance deficiency was entered into the licensee's corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that access to a high radiation area was not properly controlled.

This finding is more than minor because it is associated with the Occupational Radiation Safety attribute of exposure control and affected the cornerstone objective in that not controlling the locked high radiation area could increase personal exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve: (1)as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. (Section 2OS1)

Inspection Report# : 2006002*(pdf)*

Public Radiation Safety

Significance: G Dec 21, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform an adequate survey for radioactivity
The inspectors identified a non-cited violation of 10 CFR 20.1501 for failure to make surveys of the radioactivity in a "sink hole" to assure compliance with 10 CFR 20.1301(a)(1) regarding the total effective dose equivalent limit for individual members of the public from licensed operations, specifically regarding assessing dose for batch releases of liquid radioactive waste and assessing annual dose.

This violation is more than minor because it is associated with the cornerstone attribute of maintaining a program and process to estimate offsite dose due to abnormal releases and to record and report on such releases and because it affected the Radiation Safety/Public Radiation Safety Cornerstone's objective to ensure the adequate protection of public health and safety from exposure to radioactive materials released into the public domain. The violation is of very low significance because, while it did impair the licensee's ability to assess the timing of dose consequence and the accuracy of the batch and annual effluent release dose records and reports due to the large difference in transit times for the permitted and non-permitted discharge pathways to the bay, the licensee did account for all released radioactivity and did assess the cumulative doses from their effluent releases. Additionally, the violation is of very low significance because the involved radioactivity had been addressed in licensee permits prior to release, the unanalyzed non-permitted pathway (i.e., via groundwater to the bay) did not impact private property, the dose consequences would not differ significantly from those calculated in the licensee's release permits, and the assessed doses did not exceed the dose values in Appendix I to 10 CFR 50.

Inspection Report# : 2006003*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 18, 2005
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team determined that Constellation's Calvert Cliffs (CC) Units 1 and 2 Nuclear Power Plants were effective at identifying problems and entering them into the corrective action program (CAP). Relatively few deficiencies were identified by external organizations (including NRC) that had not been previously identified by the licensee. Audits and self-assessments were generally thorough. Once entered into the CAP, issues were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were also properly evaluated commensurate with their safety significance. The causal evaluations for equipment and performance issues were complete, and proposed corrective actions that addressed the identified causes. Corrective actions were generally effective and typically implemented in a timely manner. On the basis of interviews conducted during the inspection, workers at the station felt free to raise safety issues and were willing to enter them into the corrective action program. However, an ineffective maintenance procedure adversely impacted the availability of an auxiliary feedwater pump.
Inspection Report# : 2005007*(pdf)*

Last modified : December 21, 2006

Calvert Cliffs 1
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish adequate physical boundaries for RCP maintenance
Green. A self-revealing non-cited violation of Technical Specification 5.4.1 occurred when requirements contained in plant procedure NO-1-112, Safety Tagging, were not adequately implemented prior to maintenance on the 12A reactor coolant pump. Specifically, on February 22, 2006, while in Mode 5, a component cooling water system containment isolation valve was stroked open while performing a surveillance test which resulted in a level decrease of about 20 inches in the component cooling water head tank. The cause of the event was due to an incomplete tagout boundary which had been established for the 12A reactor coolant pump seal replacement maintenance activity. The licensee documented this performance deficiency in their corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that licensed operators did not establish adequate tagout boundaries.
.
This finding was more than minor because it was associated with the Initiating Event Cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The event did not involve an actual loss of shutdown cooling (SDC). As a result, this finding was determined to be of very low safety significance (Green) in accordance with a risk assessment performed using the NRC Inspection Manual Chapter (IMC)0609, "Significance Determination Process," Appendix G, "Shutdown Operations". (Section 1R20)

Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS for SRW and AFW with Watertight Doors Open
The Inspectors identified a non-cited violation (NCV) for the Service Water (SRW) and Auxiliary Feedwater (AFW) systems being inoperable without completing the actions required by Technicial Specifications. Constellation did not declare AFW and SRW trains inoperable when water tight doors providing a High Energy Line Break (HELB) carrier were opened for maintenance or testing. Station personnel wrote condition report (CR) IRE-016-870 to address the control of these HELB barriers and have provided guidance to declare the trains inoperable if the water tight doors are open.

This finding is more than minor because it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component availability during design basis events, specifically HELBs. The SDP phase 1 review determined a phase 1 evaluation was required since both SRW and AFW subsystems could have been impacted with the HELB barrier removed. The phase 2 evaluation yielded a very low safety significance (Green) because of the low exposure time when the watertight doors were open. A contributing cause of the finding is related to the cross cutting aspect in the area of problem identification and resolution (PI&R) because Constellation did not implement and institutionalize operating experience (OE) related to control of the HELB barriers through changes to station processes or procedures. (Section 1R15)
Inspection Report# : 2006004 *(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS 5.4.1 for Salt Water Strainers
The inspectors identified a NCV of TS 5.4.1.a because Constellation did not initiate a condition report (CR) to document the adverse performance of the service water (SRW) heat exchanger salt water (SW) strainers during high debris loading as required in the Service Water Heat Exchanger Alarm Manual. Constellation also did not assess the operability of the strainers as required by the Corrective Action Program. Station personnel initiated CR IRE-017-018 to address the issue and assess operability of the strainers.

The finding was more than minor since it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component reliability during design basis events where the SRW system was required. This finding was determined to be a finding of very low safety significance (green) because only one subsystem of the SRW system was inoperable at any time and the subsystem inoperability time was less than the maximum allowed by TS. A contributing cause of this finding was related to the cross-cutting aspect of PI&R because Constellation did not implement the corrective action program with a low threshold for identifying the problems with the SRW heat exchanger SW strainers. (Section 4OA2)
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish reference values or reconfirm previous values following maintenance that affected reference values of the AFW and ECCS pumps
The inspectors identified a non-cited violation of 10 CFR 50.55a, Codes and Standards, because the licensee did not establish new reference values or reconfirm the previous reference values following maintenance that affected hydraulic or mechanical parameters on the auxiliary feedwater (AFW) and emergency core cooling system (ECCS) pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for inservice testing. The licensee entered this issue into their corrective action program as IRE-014-764. The planned corrective action include a review of maintenance and IST data to determine whether new reference values are needed or reconfirm existing reference values for the AFW and ECCS pumps.

This finding is more than minor because the same issue affected a number of safety-related pumps tested and the issue was repetitive. The finding has a very low safety significance because the condition did not result in an actual failure of the AFW and ECCS pumps, or result in systems being declared inoperable for greater than their allowed technical specification outage time. A contributing cause of the finding is related to the cross-cutting aspect in the area of problem identification and resolution because the licensee did not periodically trend and assess information to identify programmatic and common cause problems.

Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Evaluation for Repetitive Functional Failures
The inspectors identified a non-cited violation (NCV) of 10CFR50.65 ("the Maintenance Rule") paragraph (a)(2) in that the licensee failed to demonstrate that the performance of service water turbine building isolation valves were being effectively controlled through preventive maintenance. The licensee did not fully evaluate repetitive valve test failures and their impact on the performance demonstration that justified monitoring under paragraph (a)(2) of the Maintenance Rule. Upon evaluation, the licensee determined that the repetitive functional failures should have caused the effected valves to be monitored in accordance with Maintenance Rule paragraph (a)(1) requirements. The licensee entered the performance deficiency regarding Maintenance Rule program implementation into their corrective action program for resolution. Specific corrective actions were taken to address the individual valve test failures when they occurred. The inspector

identified that a contributing cause of this finding was related to the cross-cutting area of human performance due to the incorrect performance determination by plant staff.

This finding is greater than minor, because it affected the reliability objective of the Equipment Performance attribute under the Mitigating Systems Cornerstone. Specifically, the licensee did not demonstrate effective control of the performance of the isolation valves by failing to place the affected structure, system, component (SSC) in a Maintenance Rule (a)(1) category due to its failure to demonstrate acceptable performance. The finding is of very low safety significance, because the isolation valve failures did not result in a loss of operability, did not represent a loss of a system or train safety function, and did not involve an external event. Specifically, the service water isolation capability was maintained due to the operability of redundant isolation valves that are in series with the valves that failed. (Section 1R12)

Inspection Report# : 2006002 *(pdf)*

Significance: W Mar 24, 2006
Identified By: Self-Revealing
Item Type: VIO Violation
Failure to Adequately Control the Design of the Setpoints for "1A" EDG Feeder Breaker for Essential EDG Support Systems
A violation of 10 CFR 50, Appendix B, Criterion III (Design Control) was identified involving the failure to ensure an adequate trip setpoint for the electrical circuit breaker that supplies the "1A" EDG support systems. An SDP Phase 3 risk analysis determined that the failure to account for possible combinations of "1A" EDG support equipment operation in the short-time over-current trip setpoint for the supply breaker to 1MCC123 was preliminarily of low to moderate safety significance. Specifically, the short-time over-current trip setpoint was set too low and it did not account for the in-rush current associated with the possible combinations of equipment that could start and operate to support the "1A" EDG following a loss of offsite power (LOOP). This low setpoint, combined with normal setpoint drift, resulted in substantial periods where the "1A" EDG would not have been able to perform its safety function, because the support system supply circuit breaker would have tripped open inappropriately. Calvert Cliffs took immediate action to correct the breaker setpoint and evaluate other potential deficiencies of a similar nature. This issue was entered into the corrective action program at Calvert Cliffs for resolution.

The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems (i.e., emergency AC power) that respond to initiating events to prevent undesirable consequences, and its related attribute for design control. The "0C" Station Blackout Diesel Generator (a non-safety related, but risk-important power source) and the breaker for its support systems were similarly affected by the performance deficiency. SDP Phase 1, Phase 2, and Phase 3 assessments were used to evaluate the risk significance of this finding. The Phase 1 screening required performance of a Phase 2 evaluation because the finding represented a loss of safety function of a single train, for greater than its allowed outage time. The Technical Specification (TS) allowed outage time is 14 days for a single EDG. To assess the full significance both the Phase 2 and Phase 3 analyzes assumed a 5407 hour exposure for the "1A" EDG being unable to perform its safety function and an additional 6.7 hours where both the "1A" EDG and the "0C" DG would not have been able to perform their required functions (the "0C" EDG had less instrument drift). The Region I senior reactor analyst (SRA) conducted a Phase 3 Risk Assessment, to refine the Phase 2 analysis and to incorporate external events and recovery credit. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, determined a ?CDF of approximately 1 in 150,000 years of operation (mid E-6 per year range) for both internal and external events, with no associated increase in large early release frequency (LERF). The risk of the "1A" EDG exposure time dominated the analysis by several orders of magnitude over the risk of the concurrent "1A" EDG and "0C" DG exposure time. A large fire in the turbine building, which causes a loss of offsite power, was the dominating initiating event.

Inspection Report# : 2006012 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to properly control access to a high radiation area
Green. A self-revealing non-cited violation (NCV) associated with the alternate access control requirements established in accordance with 10 CFR 20.1601 (c), was identified. Specifically, the licensee failed to control and properly post a high radiation area with dose rates greater than 1,000 millirems per hour. On January18, 2006, a nondestructive examination (NDE) worker's electronic personnel dosimeter unexpectedly alarmed when the worker was exposed to unanticipated radiation levels of up to approximately 3,000millirems per hour. The area was not adequately surveyed by a radiation protection technician to establish the dose rate levels in the area and to properly post the area, and the worker was not made aware of the actual dose rate levels prior to entry into the area while wearing an alarming electronic personnel dosimeter. The licensee determined that the worker received less than ten millirems. This performance deficiency was entered into the licensee's corrective action program for resolution. The inspectors determined that a contributing cause of this finding was related to the cross-cutting area of human performance in that access to a high radiation area was not properly controlled.

This finding is more than minor because it is associated with the Occupational Radiation Safety attribute of exposure control and affected the cornerstone objective in that not controlling the locked high radiation area could increase personal exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve: (1)as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. (Section 2OS1)

Inspection Report# : 2006002 *(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : March 01, 2007

Calvert Cliffs 1
1Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS for SRW and AFW with Watertight Doors Open
The Inspectors identified a non-cited violation (NCV) for the Service Water (SRW) and Auxiliary Feedwater (AFW) systems being inoperable without completing the actions required by Technicial Specifications. Constellation did not declare AFW and SRW trains inoperable when water tight doors providing a High Energy Line Break (HELB) carrier were opened for maintenance or testing. Station personnel wrote condition report (CR) IRE-016-870 to address the control of these HELB barriers and have provided guidance to declare the trains inoperable if the water tight doors are open.

This finding is more than minor because it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component availability during design basis events, specifically HELBs. The SDP phase 1 review determined a phase 1 evaluation was required since both SRW and AFW subsystems could have been impacted with the HELB barrier removed. The phase 2 evaluation yielded a very low safety significance (Green) because of the low exposure time when the watertight doors were open. A contributing cause of the finding is related to the cross cutting aspect in the area of problem identification and resolution (PI&R) because Constellation did not implement and institutionalize operating experience (OE) related to control of the HELB barriers through changes to station processes or procedures. (Section 1R15)
Inspection Report# : 2006004 *(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS 5.4.1 for Salt Water Strainers
The inspectors identified a NCV of TS 5.4.1.a because Constellation did not initiate a condition report (CR) to document the adverse performance of the service water (SRW) heat exchanger salt water (SW) strainers during high debris loading as required in the Service Water Heat Exchanger Alarm Manual. Constellation also did not assess the operability of the strainers as required by the Corrective Action Program. Station personnel initiated CR IRE-017-018 to address the issue and assess operability of the strainers.

The finding was more than minor since it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component reliability during design basis events where the SRW system was required. This finding was determined to be a finding of very low safety significance (green) because only one subsystem of the SRW system was inoperable at any time and the subsystem inoperability time was less than the maximum allowed by TS. A contributing cause of this finding was related to the cross-cutting aspect of PI&R because Constellation did not implement the corrective action program with a low threshold for identifying the problems with the SRW heat exchanger SW strainers. (Section 4OA2)
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to establish reference values or reconfirm previous values following maintenance that affected reference values of the AFW and ECCS pumps
The inspectors identified a non-cited violation of 10 CFR 50.55a, Codes and Standards, because the licensee did not establish new reference values or reconfirm the previous reference values following maintenance that affected hydraulic or mechanical parameters on the auxiliary feedwater (AFW) and emergency core cooling system (ECCS) pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for inservice testing. The licensee entered this issue into their corrective action program as IRE-014-764. The planned corrective action include a review of maintenance and IST data to determine whether new reference values are needed or reconfirm existing reference values for the AFW and ECCS pumps.

This finding is more than minor because the same issue affected a number of safety-related pumps tested and the issue was repetitive. The finding has a very low safety significance because the condition did not result in an actual failure of the AFW and ECCS pumps, or result in systems being declared inoperable for greater than their allowed technical specification outage time. A contributing cause of the finding is related to the cross-cutting aspect in the area of problem identification and resolution because the licensee did not periodically trend and assess information to identify programmatic and common cause problems.

Inspection Report# : 2006003 *(pdf)*

Significance: W Mar 24, 2006
Identified By: Self-Revealing
Item Type: VIO Violation
Failure to Adequately Control the Design of the Setpoints for "1A" EDG Feeder Breaker for Essential EDG Support Systems
A violation of 10 CFR 50, Appendix B, Criterion III (Design Control) was identified involving the failure to ensure an adequate trip setpoint for the electrical circuit breaker that supplies the "1A" EDG support systems. An SDP Phase 3 risk analysis determined that the failure to account for possible combinations of "1A" EDG support equipment operation in the short-time over-current trip setpoint for the supply breaker to 1MCC123 was preliminarily of low to moderate safety significance. Specifically, the short-time over-current trip setpoint was set too low and it did not account for the in-rush current associated with the possible combinations of equipment that could start and operate to support the "1A" EDG following a loss of offsite power (LOOP). This low setpoint, combined with normal setpoint drift, resulted in substantial periods where the "1A" EDG would not have been able to perform its safety function, because the support system supply circuit breaker would have tripped open inappropriately. Calvert Cliffs took immediate action to correct the breaker setpoint and evaluate other potential deficiencies of a similar nature. This issue was entered into the corrective action program at Calvert Cliffs for resolution.

The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems (i.e., emergency AC power) that respond to initiating events to prevent undesirable consequences, and its related attribute for design control. The "0C" Station Blackout Diesel Generator (a non-safety related, but risk-important power source) and the breaker for its support systems were similarly affected by the performance deficiency. SDP Phase 1, Phase 2, and Phase 3 assessments were used to evaluate the risk significance of this finding. The Phase 1 screening required performance of a Phase 2 evaluation because the finding represented a loss of safety function of a single train, for greater than its allowed outage time. The Technical Specification (TS) allowed outage time is 14 days for a single EDG. To assess the full significance both the Phase 2 and Phase 3 analyzes assumed a 5407 hour exposure for the "1A" EDG being unable to perform its safety function and an additional 6.7 hours where both the "1A" EDG and the "0C" DG would not have been able to perform their required functions (the "0C" EDG had less instrument drift). The Region I senior reactor analyst (SRA) conducted a Phase 3 Risk Assessment, to refine the Phase 2 analysis and to incorporate external events and recovery credit. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, determined a ?CDF of approximately 1 in 150,000 years of operation (mid E-6 per year range) for both internal and external events, with no associated increase in large early release frequency (LERF). The risk of the "1A" EDG exposure time dominated the analysis by several orders of magnitude over the risk of the concurrent "1A" EDG and "0C" DG exposure time. A large fire in the turbine building, which causes a loss of offsite power, was the dominating initiating event.

Inspection Report# : 2006012 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 01, 2007

Calvert Cliffs 1
2Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Maintain the RCS Reduced Inventtory Procedure
The inspectors identified a NCV of TS 5.4.1.a, Administrative Controls, when Constellation did not maintain an adequate procedure to drain and fill the RCS. Specifically, OP-7 permitted operation in a reduced RCS inventory condition without requiring redundant means of reactor level indication available. This is not in accordance with Nuclear Operations Administrative Procedure NO-1-103, Lower Mode Operations and Constellation's commitments in response to NRC Generic Letter (GL) 88-17, Loss of Decay Heat Removal. Constellation entered this issue into their CAP as IRE-022-121 and immediate corrective actions included the suspension of OP-7 pending resolution of this issue.

This finding is greater than minor because it is associated with the Initiating Event cornerstone attribute of equipment performance and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedure for operation in reduced RCS inventory increased the likelihood of the loss of RCS level indication and consequently a loss of residual heat removal (RHR) initiating event. The inspectors determined that this finding was of very low safety significance based on IMC 0609, Appendix G, Figure 1. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedure for operation with the RCS in reduced inventory was complete and accurate (H.2.c).
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Preclude Recurrence of a Significant Condition Adverse to Quality Associated with Power Operated Relief Valves
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," occurred because Constellation did not implement adequate corrective actions for a significant condition adverse to quality associated with the slow closure of a pressurizer power operated relief valve (PORV) due to a main disc guide being out of round. Specifically, Constellation did not perform an extent of condition review from a February 2006 event such that corrective actions would preclude recurrence of the issue. Subsequently, during a Unit 2 reactor trip on November 16, 2006, a PORV remained open longer than expected and resulted in a safety injection actuation signal. Constellation entered this issue into the corrective action program (CAP) for resolution. Immediate corrective actions for this issue included replacement of the main disc guide and an extent of condition review of the remaining PORVs on Unit 1 and Unit 2.

This finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that challenge critical safety functions. Inspectors evaluated the significance of the finding using an SDP Phase 2 analysis and determined the issue was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate an equipment malfunction such that the extent of condition was considered and the cause resolved (P.1.c of IMC 0305).
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Demonstrate that the MSSV Performance Was Being Effectively Controlled per 10 CFR 50.65(a)(2).
The inspectors identified a NCV of 10 CFR 50.65(a)(2) because Constellation did not demonstrate that performance monitoring of the main steam safety valves (MSSVs) was being effectively controlled through the performance of appropriate preventive maintenance. Specifically, in February 2006, Constellation experienced repetitive and numerous issues associated with MSSV lift settings outside specified TSs. However, Constellation did not recognize the unsatisfactory performance monitoring of this system in accordance with the 10 CFR 50.65(a)(2) and place the system in (a)(1) status. Constellation entered this issue into their CAP for resolution.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of the MSSVs, which respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not trend and assess information from the CAP and other assessments to identify programmatic and common cause problems with the MSSVs (P.1.b).
Inspection Report# : 2007003 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
Failure To Take timely Actions To Evaluate And Correct Station Blackout Diesel Degraded Conditions
The inspectors identified a finding for the failure to take timely action to evaluate and correct adverse conditions associated with the station blackout (SBO) diesel generator. During the February 14, 2007, performance evaluation, the SBO diesel experienced high crankcase pressure, a high lube oil filter fouling rate, and glycol in the lube oil. Constellation inspected the diesel engine and identified that the head of the A4 cylinder of the SBO diesel 0C2 engine was cracked. The inspectors determined that similar symptoms existed during the January 14, 2007, performance evaluation; however, the degraded conditions were not adequately evaluated and corrected in a timely manner as required by the augmented quality assurance program for the SBO diesel. Constellation entered the deficiency into their corrective action program for resolution. Immediate corrective actions included a replacement of the cracked cylinder head. The cause of the finding is related to the cross-cutting element in the area of problem identification and resolution because Constellation did not properly prioritize and evaluate conditions adverse to quality (P.1.c).

This finding is more than minor because it affected the availability objective of the equipment performance attribute under the Mitigation System Cornerstone. Based on a Significance Determination Process (SDP) Phase 3 analysis, the finding represented low safety significance and was determined to be Green for Units 1 and 2 based on Core Damage Frequency (CDF). (Section 1R15)

Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Adequately Implement FME Procedures And Controls
A self-revealing non-cited violation (NCV) of Technical Specification 5.4.1.a occurred because Constellation did not adequately implement foreign material exclusion (FME) procedures and controls to prevent debris from entering the spent fuel pool (SFP). This was the most likely cause of a control element assembly (CEA) to bind and become inoperable (untrippable). Constellation submitted a licensee event report (LER) and entered this issue into theircorrective action program for resolution. The inspectors determined that a contributing cause of this finding is

related to the cross-cutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations to follow FME procedures (H.4.b).

This finding is greater than minor because it affected the reliability of the reactivity control system and is associated with the Mitigating System Cornerstone and the respective attribute of human performance. The finding is of very low safety significance because it did not result in an actual loss of system safety function for a period of time greater than allowed by Technical Specifications. (Section 4OA3.2)
Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Recognize That One Or More Channels Of The High-Rate-Of-Change Trip function Was Inoperable
The inspectors identified a non-cited violation (NCV) of Technical Specification Limiting Condition for Operation (LCO) of 3.3.1 and 3.0.3 because Constellation did not recognize that one or more channels of the high rate-of-change (startup rate) trip function did not meet Technical Specifications (TS) requirements following the completion and acceptance of Linear Power Channel Calibration surveillance on several occasions during a three year period. Constellation discovered this during a reduction of power to perform maintenance on the Unit 2 voltage regulator drawers. Constellation submitted a licensee event report (LER) and entered this issue into their corrective action program for resolution. The inspectors determined that a contributing cause of this finding is related to a cross-cutting aspect in the area of problem identification and resolution because Constellation did not promptly take actions to address safety issues in a timely manner, commensurate with its significance (P.1.a).

This finding is greater than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems (i.e., reactivity control) that respond to initiating events to prevent undesirable consequences and is related to attributes of procedure quality and human performance. The finding is of very low safety significance because it did not result in an actual loss of safety function because the plant was not in a condition that only relied on the startup rate trip function to protect against anticipated operational occurrences (AOOs). The startup rate trip function serves as a backup to the power level high and thermal margin/low pressure trip functions while the reactor is critical at low power levels, to protect against CEA rod withdrawal and boron dilution events. (Section 4OA3.5)
Inspection Report# : 2007002 *(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS for SRW and AFW with Watertight Doors Open
The Inspectors identified a non-cited violation (NCV) for the Service Water (SRW) and Auxiliary Feedwater (AFW) systems being inoperable without completing the actions required by Technicial Specifications. Constellation did not declare AFW and SRW trains inoperable when water tight doors providing a High Energy Line Break (HELB) carrier were opened for maintenance or testing. Station personnel wrote condition report (CR) IRE-016-870 to address the control of these HELB barriers and have provided guidance to declare the trains inoperable if the water tight doors are open.

This finding is more than minor because it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component availability during design basis events, specifically HELBs. The SDP phase 1 review determined a phase 1 evaluation was required since both SRW and AFW subsystems could have been impacted with the HELB barrier removed. The phase 2 evaluation yielded a very low safety significance (Green) because of the low exposure time when the watertight doors were open. A contributing cause of the finding is related to the cross cutting aspect in the area of problem identification and resolution (PI&R) because Constellation did not implement and institutionalize operating experience (OE) related to control of the HELB barriers through changes to station processes or procedures. (Section 1R15)
Inspection Report# : 2006004 *(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with TS 5.4.1 for Salt Water Strainers
The inspectors identified a NCV of TS 5.4.1.a because Constellation did not initiate a condition report (CR) to document the adverse performance of the service water (SRW) heat exchanger salt water (SW) strainers during high debris loading as required in the Service Water Heat Exchanger Alarm Manual. Constellation also did not assess the operability of the strainers as required by the Corrective Action Program. Station personnel initiated CR IRE-017-018 to address the issue and assess operability of the strainers.

The finding was more than minor since it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component reliability during design basis events where the SRW system was required. This finding was determined to be a finding of very low safety significance (green) because only one subsystem of the SRW system was inoperable at any time and the subsystem inoperability time was less than the maximum allowed by TS. A contributing cause of this finding was related to the cross-cutting aspect of PI&R because Constellation did not implement the corrective action program with a low threshold for identifying the problems with the SRW heat exchanger SW strainers. (Section 4OA2)
Inspection Report# : 2006004 *(pdf)*

Significance: W Aug 16, 2006
Identified By: Self-Revealing
Item Type: VIO Violation
Failure to Adequately Control the Design of the Setpoints for "1A" EDG Feeder Breaker for Essential EDG Support Systems
A violation of 10 CFR 50, Appendix B, Criterion III (Design Control) was identified involving the failure to ensure an adequate trip setpoint for the electrical circuit breaker that supplies the "1A" EDG support systems. An SDP Phase 3 risk analysis determined that the failure to account for possible combinations of "1A" EDG support equipment operation in the short-time over-current trip setpoint for the supply breaker to 1MCC123 was preliminarily of low to moderate safety significance. Specifically, the short-time over-current trip setpoint was set too low and it did not account for the in-rush current associated with the possible combinations of equipment that could start and operate to support the "1A" EDG following a loss of offsite power (LOOP). This low setpoint, combined with normal setpoint drift, resulted in substantial periods where the "1A" EDG would not have been able to perform its safety function, because the support system supply circuit breaker would have tripped open inappropriately. Calvert Cliffs took immediate action to correct the breaker setpoint and evaluate other potential deficiencies of a similar nature. This issue was entered into the corrective action program at Calvert Cliffs for resolution.

The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems (i.e., emergency AC power) that respond to initiating events to prevent undesirable consequences, and its related attribute for design control. The "0C" Station Blackout Diesel Generator (a non-safety related, but risk-important power source) and the breaker for its support systems were similarly affected by the performance deficiency. SDP Phase 1, Phase 2, and Phase 3 assessments were used to evaluate the risk significance of this finding. The Phase 1 screening required performance of a Phase 2 evaluation because the finding represented a loss of safety function of a single train, for greater than its allowed outage time. The Technical Specification (TS) allowed outage time is 14 days for a single EDG. To assess the full significance both the Phase 2 and Phase 3 analyzes assumed a 5407 hour exposure for the "1A" EDG being unable to perform its safety function and an additional 6.7 hours where both the "1A" EDG and the "0C" DG would not have been able to perform their required functions (the "0C" EDG had less instrument drift). The Region I senior reactor analyst (SRA) conducted a Phase 3 Risk Assessment, to refine the Phase 2 analysis and to incorporate external events and recovery credit. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, determined a ?CDF of approximately 1 in 150,000 years of operation (mid E-6 per year range) for both internal and external events, with no associated increase in large early release frequency (LERF). The risk of the "1A" EDG exposure time dominated the analysis by several orders of magnitude over the risk of the concurrent "1A" EDG and "0C" DG exposure time. A large fire in the turbine building, which causes a loss of offsite power, was the dominating initiating event.

Inspection Report# : 2007006 *(pdf)*

Inspection Report# : 2006012 *(pdf)*

Barrier Integrity

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement TS 3.6.3 Required Actions for Containment Isolation Valves
The inspectors identified a NCV of TS 3.6.3, Containment Isolation Valves, because Constellation did not implement actions as specified in TS 3.6.3. Specifically, Constellation did not include all containment isolation valves (CIVs) within the scope of TS requirements, which led to inadequate TS actions being taken for these valves when they became inoperable. Constellation entered this issue into their CAP as IRE-021-913. The planned corrective actions included a review of potential reportable conditions and a standing order for operation personnel to enter TS 3.6.3 for all CIVs as appropriate.

This finding is greater than minor because it is associated with the configuration control attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers such as containment protects the public from radio nuclide releases caused by accidents or events. The inspectors evaluated the significance of this finding using a SDP Phase 1 and Phase 2 analysis, which required evaluation using IMC 0609, Appendix H, because some of the inoperable valves identified in the reportability review involved an actual reduction in the defense-in-depth for the atmospheric pressure control of the reactor containment. Based on the results of the Phase 2 analysis, this finding was determined to have very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take actions to address safety issues in a timely manner, commensurate with their significance (P.1.a).
Inspection Report# : 2007003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 24, 2007

Calvert Cliffs 1
3Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Maintain the RCS Reduced Inventtory Procedure
The inspectors identified a NCV of TS 5.4.1.a, Administrative Controls, when Constellation did not maintain an adequate procedure to drain and fill the RCS. Specifically, OP-7 permitted operation in a reduced RCS inventory condition without requiring redundant means of reactor level indication available. This is not in accordance with Nuclear Operations Administrative Procedure NO-1-103, Lower Mode Operations and Constellation's commitments in response to NRC Generic Letter (GL) 88-17, Loss of Decay Heat Removal. Constellation entered this issue into their CAP as IRE-022-121 and immediate corrective actions included the suspension of OP-7 pending resolution of this issue.

This finding is greater than minor because it is associated with the Initiating Event cornerstone attribute of equipment performance and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedure for operation in reduced RCS inventory increased the likelihood of the loss of RCS level indication and consequently a loss of residual heat removal (RHR) initiating event. The inspectors determined that this finding was of very low safety significance based on IMC 0609, Appendix G, Figure 1. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedure for operation with the RCS in reduced inventory was complete and accurate (H.2.c).
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Preclude Recurrence of a Significant Condition Adverse to Quality Associated with Power Operated Relief Valves
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," occurred because Constellation did not implement adequate corrective actions for a significant condition adverse to quality associated with the slow closure of a pressurizer power operated relief valve (PORV) due to a main disc guide being out of round. Specifically, Constellation did not perform an extent of condition review from a February 2006 event such that corrective actions would preclude recurrence of the issue. Subsequently, during a Unit 2 reactor trip on November 16, 2006, a PORV remained open longer than expected and resulted in a safety injection actuation signal. Constellation entered this issue into the corrective action program (CAP) for resolution. Immediate corrective actions for this issue included replacement of the main disc guide and an extent of condition review of the remaining PORVs on Unit 1 and Unit 2.

This finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that challenge critical safety functions. Inspectors evaluated the significance of the finding using an SDP Phase 2 analysis and determined the issue was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate an equipment malfunction such that the extent of condition was considered and the cause resolved (P.1.c of IMC 0305).
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Procedures for EDG Maintenance
A Green, self-revealing, NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," was identified because Constellation did not establish and maintain emergency diesel generator (EDG) maintenance procedures that incorporated appropriate torque values for the engine top cover bolts specified in the vendor technical manual. During a monthly surveillance of the Unit 1 1B EDG, oil leaked from multiple loose engine top cover bolts onto the exhaust manifold and resulted in a small fire. Constellation entered this issue into their CAP as IRE-024-616. The immediate corrective actions included tightening the cover bolts to the vendor recommended torque value and verifying the proper torque values for the remaining EDGs.

This finding was similar to Example 4.f of Appendix E to IMC 0612 in that it involved a lube oil leak and a fire hazard. The finding is greater than minor because it associated with the procedure quality attribute under the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of the EDG to respond to initiating events to prevent undesirable consequences. Specifically, the loose engine cover bolts challenged the reliability of EDG and if left uncorrected, the inadequate EDG maintenance procedure could result in a more significant safety concern. The inspectors determined that the finding is of very low safety significance (Green) because the finding confirmed not to result in a loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal OE and vendor recommendations, through changes to station processes, procedures, and training programs (P.2.b per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Acceptance Limits for Thermal Performance Testing of Component Cooling Water Heat Exchangers
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for Units 1 and 2 because Constellation did not incorporate acceptance limits contained in the design basis calculation into the thermal performance test procedure for the component cooling heat exchangers (CCHXs) or evaluate test results once the 11 CCHX exceeded the acceptance limits. The inspectors determined that the 11 CCHX exceeded the fouling factor for the tests performed in 2004 and 2006 but Constellation failed to evaluate those conditions for acceptability. Constellation's immediate corrective actions included performing an assessment to verify the operability of the 11 CCHX and entering this issue into the corrective action program (CAP).

The finding is greater than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability, availability, and reliability of the CCHXs to remove their design basis heat load under accident conditions. In addition, if left uncorrected, this finding would result in a more significant safety concern because the fouling factor for the 11 CCHX could exceed its acceptance limit prior to the next tube cleaning and cause the heat exchanger to become inoperable. The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify the issue in a timely manner in that the inadequate test procedure was not identified nor was a CR initiated once the limiting fouling factor was exceeded (P.1.a per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Demonstrate that the MSSV Performance Was Being Effectively Controlled per 10 CFR 50.65(a)(2).
The inspectors identified a NCV of 10 CFR 50.65(a)(2) because Constellation did not demonstrate that performance monitoring of the main steam safety valves (MSSVs) was being effectively controlled through the performance of appropriate preventive maintenance. Specifically, in February 2006, Constellation experienced repetitive and numerous issues associated with MSSV lift settings outside specified TSs. However, Constellation did not recognize the unsatisfactory performance monitoring of this system in accordance with the 10 CFR 50.65(a)(2) and place the system in (a)(1) status. Constellation entered this issue into their CAP for resolution.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of the MSSVs, which respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not trend and assess information from the CAP and other assessments to identify programmatic and common cause problems with the MSSVs (P.1.b).
Inspection Report# : 2007003 *(pdf)*

Significance:  Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
Failure To Take timely Actions To Evaluate And Correct Station Blackout Diesel Degraded Conditions
The inspectors identified a finding for the failure to take timely action to evaluate and correct adverse conditions associated with the station blackout (SBO) diesel generator. During the February 14, 2007, performance evaluation, the SBO diesel experienced high crankcase pressure, a high lube oil filter fouling rate, and glycol in the lube oil. Constellation inspected the diesel engine and identified that the head of the A4 cylinder of the SBO diesel 0C2 engine was cracked. The inspectors determined that similar symptoms existed during the January 14, 2007, performance evaluation; however, the degraded conditions were not adequately evaluated and corrected in a timely manner as required by the augmented quality assurance program for the SBO diesel. Constellation entered the deficiency into their corrective action program for resolution. Immediate corrective actions included a replacement of the cracked cylinder head. The cause of the finding is related to the cross-cutting element in the area of problem identification and resolution because Constellation did not properly prioritize and evaluate conditions adverse to quality (P.1.c).

This finding is more than minor because it affected the availability objective of the equipment performance attribute under the Mitigation System Cornerstone. Based on a Significance Determination Process (SDP) Phase 3 analysis, the finding represented low safety significance and was determined to be Green for Units 1 and 2 based on Core Damage Frequency (CDF). (Section 1R15)

Inspection Report# : 2007002 *(pdf)*

Significance:  Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Adequately Implement FME Procedures And Controls
A self-revealing non-cited violation (NCV) of Technical Specification 5.4.1.a occurred because Constellation did not adequately implement foreign material exclusion (FME) procedures and controls to prevent debris from entering the spent fuel pool (SFP). This was the most likely cause of a control element assembly (CEA) to bind and become inoperable (untrippable). Constellation submitted a licensee event report (LER) and entered this issue into theircorrective action program for resolution. The inspectors determined that a contributing cause of this finding is related to the cross-cutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations to follow FME procedures (H.4.b).

This finding is greater than minor because it affected the reliability of the reactivity control system and is associated with the Mitigating System Cornerstone and the respective attribute of human performance. The finding is of very low safety significance because it did not result in an actual loss of system safety function for a period of time greater than allowed by Technical Specifications. (Section 4OA3.2)

Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Recognize That One Or More Channels Of The High-Rate-Of-Change Trip function Was Inoperable
The inspectors identified a non-cited violation (NCV) of Technical Specification Limiting Condition for Operation (LCO) of 3.3.1 and 3.0.3 because Constellation did not recognize that one or more channels of the high rate-of-change (startup rate) trip function did not meet Technical Specifications (TS) requirements following the completion and acceptance of Linear Power Channel Calibration surveillance on several occasions during a three year period. Constellation discovered this during a reduction of power to perform maintenance on the Unit 2 voltage regulator drawers. Constellation submitted a licensee event report (LER) and entered this issue into their corrective action program for resolution. The inspectors determined that a contributing cause of this finding is related to a cross-cutting aspect in the area of problem identification and resolution because Constellation did not promptly take actions to address safety issues in a timely manner, commensurate with its significance (P.1.a).

This finding is greater than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems (i.e., reactivity control) that respond to initiating events to prevent undesirable consequences and is related to attributes of procedure quality and human performance. The finding is of very low safety significance because it did not result in an actual loss of safety function because the plant was not in a condition that only relied on the startup rate trip function to protect against anticipated operational occurrences (AOOs). The startup rate trip function serves as a backup to the power level high and thermal margin/low pressure trip functions while the reactor is critical at low power levels, to protect against CEA rod withdrawal and boron dilution events. (Section 4OA3.5)
Inspection Report# : 2007002 *(pdf)*

Barrier Integrity

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement TS 3.6.3 Required Actions for Containment Isolation Valves
The inspectors identified a NCV of TS 3.6.3, Containment Isolation Valves, because Constellation did not implement actions as specified in TS 3.6.3. Specifically, Constellation did not include all containment isolation valves (CIVs) within the scope of TS requirements, which led to inadequate TS actions being taken for these valves when they became inoperable. Constellation entered this issue into their CAP as IRE-021-913. The planned corrective actions included a review of potential reportable conditions and a standing order for operation personnel to enter TS 3.6.3 for all CIVs as appropriate.

This finding is greater than minor because it is associated with the configuration control attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers such as containment protects the public from radio nuclide releases caused by accidents or events. The inspectors evaluated the significance of this finding using a SDP Phase 1 and Phase 2 analysis, which required evaluation using IMC 0609, Appendix H, because some of the inoperable valves identified in the reportability review involved an actual reduction in the defense-in-depth for the atmospheric pressure control of the reactor containment. Based on the results of the Phase 2 analysis, this finding was determined to have very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take actions to address safety issues in a timely manner, commensurate with their significance (P.1.a).
Inspection Report# : 2007003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 07, 2007

Calvert Cliffs 1
4Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Maintain the RCS Reduced Inventtory Procedure
The inspectors identified a NCV of TS 5.4.1.a, Administrative Controls, when Constellation did not maintain an adequate procedure to drain and fill the RCS. Specifically, OP-7 permitted operation in a reduced RCS inventory condition without requiring redundant means of reactor level indication available. This is not in accordance with Nuclear Operations Administrative Procedure NO-1-103, Lower Mode Operations and Constellation's commitments in response to NRC Generic Letter (GL) 88-17, Loss of Decay Heat Removal. Constellation entered this issue into their CAP as IRE-022-121 and immediate corrective actions included the suspension of OP-7 pending resolution of this issue.

This finding is greater than minor because it is associated with the Initiating Event cornerstone attribute of equipment performance and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedure for operation in reduced RCS inventory increased the likelihood of the loss of RCS level indication and consequently a loss of residual heat removal (RHR) initiating event. The inspectors determined that this finding was of very low safety significance based on IMC 0609, Appendix G, Figure 1. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedure for operation with the RCS in reduced inventory was complete and accurate (H.2.c).
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Preclude Recurrence of a Significant Condition Adverse to Quality Associated with Power Operated Relief Valves
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," occurred because Constellation did not implement adequate corrective actions for a significant condition adverse to quality associated with the slow closure of a pressurizer power operated relief valve (PORV) due to a main disc guide being out of round. Specifically, Constellation did not perform an extent of condition review from a February 2006 event such that corrective actions would preclude recurrence of the issue. Subsequently, during a Unit 2 reactor trip on November 16, 2006, a PORV remained open longer than expected and resulted in a safety injection actuation signal. Constellation entered this issue into the corrective action program (CAP) for resolution. Immediate corrective actions for this issue included replacement of the main disc guide and an extent of condition review of the remaining PORVs on Unit 1 and Unit 2.

This finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that challenge critical safety functions. Inspectors evaluated the significance of the finding using an SDP Phase 2 analysis and determined the issue was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate an equipment malfunction such that the extent of condition was considered and the cause resolved (P.1.c of IMC 0305).
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Procedures for EDG Maintenance
A Green, self-revealing, NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," was identified because Constellation did not establish and maintain emergency diesel generator (EDG) maintenance procedures that incorporated appropriate torque values for the engine top cover bolts specified in the vendor technical manual. During a monthly surveillance of the Unit 1 1B EDG, oil leaked from multiple loose engine top cover bolts onto the exhaust manifold and resulted in a small fire. Constellation entered this issue into their CAP as IRE-024-616. The immediate corrective actions included tightening the cover bolts to the vendor recommended torque value and verifying the proper torque values for the remaining EDGs.

This finding was similar to Example 4.f of Appendix E to IMC 0612 in that it involved a lube oil leak and a fire hazard. The finding is greater than minor because it associated with the procedure quality attribute under the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of the EDG to respond to initiating events to prevent undesirable consequences. Specifically, the loose engine cover bolts challenged the reliability of EDG and if left uncorrected, the inadequate EDG maintenance procedure could result in a more significant safety concern. The inspectors determined that the finding is of very low safety significance (Green) because the finding confirmed not to result in a loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal OE and vendor recommendations, through changes to station processes, procedures, and training programs (P.2.b per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Acceptance Limits for Thermal Performance Testing of Component Cooling Water Heat Exchangers
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for Units 1 and 2 because Constellation did not incorporate acceptance limits contained in the design basis calculation into the thermal performance test procedure for the component cooling heat exchangers (CCHXs) or evaluate test results once the 11 CCHX exceeded the acceptance limits. The inspectors determined that the 11 CCHX exceeded the fouling factor for the tests performed in 2004 and 2006 but Constellation failed to evaluate those conditions for acceptability. Constellation's immediate corrective actions included performing an assessment to verify the operability of the 11 CCHX and entering this issue into the corrective action program (CAP).

The finding is greater than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability, availability, and reliability of the CCHXs to remove their design basis heat load under accident conditions. In addition, if left uncorrected, this finding would result in a more significant safety concern because the fouling factor for the 11 CCHX could exceed its acceptance limit prior to the next tube cleaning and cause the heat exchanger to become inoperable. The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify the issue in a timely manner in that the inadequate test procedure was not identified nor was a CR initiated once the limiting fouling factor was exceeded (P.1.a per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Demonstrate that the MSSV Performance Was Being Effectively Controlled per 10 CFR 50.65(a)(2).
The inspectors identified a NCV of 10 CFR 50.65(a)(2) because Constellation did not demonstrate that performance monitoring of the main steam safety valves (MSSVs) was being effectively controlled through the performance of appropriate preventive maintenance. Specifically, in February 2006, Constellation experienced repetitive and numerous issues associated with MSSV lift settings outside specified TSs. However, Constellation did not recognize the unsatisfactory performance monitoring of this system in accordance with the 10 CFR 50.65(a)(2) and place the system in (a)(1) status. Constellation entered this issue into their CAP for resolution.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of the MSSVs, which respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not trend and assess information from the CAP and other assessments to identify programmatic and common cause problems with the MSSVs (P.1.b).
Inspection Report# : 2007003 *(pdf)*

Significance:  Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
Failure To Take timely Actions To Evaluate And Correct Station Blackout Diesel Degraded Conditions
The inspectors identified a finding for the failure to take timely action to evaluate and correct adverse conditions associated with the station blackout (SBO) diesel generator. During the February 14, 2007, performance evaluation, the SBO diesel experienced high crankcase pressure, a high lube oil filter fouling rate, and glycol in the lube oil. Constellation inspected the diesel engine and identified that the head of the A4 cylinder of the SBO diesel 0C2 engine was cracked. The inspectors determined that similar symptoms existed during the January 14, 2007, performance evaluation; however, the degraded conditions were not adequately evaluated and corrected in a timely manner as required by the augmented quality assurance program for the SBO diesel. Constellation entered the deficiency into their corrective action program for resolution. Immediate corrective actions included a replacement of the cracked cylinder head. The cause of the finding is related to the cross-cutting element in the area of problem identification and resolution because Constellation did not properly prioritize and evaluate conditions adverse to quality (P.1.c).

This finding is more than minor because it affected the availability objective of the equipment performance attribute under the Mitigation System Cornerstone. Based on a Significance Determination Process (SDP) Phase 3 analysis, the finding represented low safety significance and was determined to be Green for Units 1 and 2 based on Core Damage Frequency (CDF). (Section 1R15)

Inspection Report# : 2007002 *(pdf)*

Significance:  Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Adequately Implement FME Procedures And Controls
A self-revealing non-cited violation (NCV) of Technical Specification 5.4.1.a occurred because Constellation did not adequately implement foreign material exclusion (FME) procedures and controls to prevent debris from entering the spent fuel pool (SFP). This was the most likely cause of a control element assembly (CEA) to bind and become inoperable (untrippable). Constellation submitted a licensee event report (LER) and entered this issue into theircorrective action program for resolution. The inspectors determined that a contributing cause of this finding is related to the cross-cutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations to follow FME procedures (H.4.b).

This finding is greater than minor because it affected the reliability of the reactivity control system and is associated with the Mitigating System Cornerstone and the respective attribute of human performance. The finding is of very low safety significance because it did not result in an actual loss of system safety function for a period of time greater than allowed by Technical Specifications. (Section 4OA3.2)

Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Recognize That One Or More Channels Of The High-Rate-Of-Change Trip function Was Inoperable
The inspectors identified a non-cited violation (NCV) of Technical Specification Limiting Condition for Operation (LCO) of 3.3.1 and 3.0.3 because Constellation did not recognize that one or more channels of the high rate-of-change (startup rate) trip function did not meet Technical Specifications (TS) requirements following the completion and acceptance of Linear Power Channel Calibration surveillance on several occasions during a three year period. Constellation discovered this during a reduction of power to perform maintenance on the Unit 2 voltage regulator drawers. Constellation submitted a licensee event report (LER) and entered this issue into their corrective action program for resolution. The inspectors determined that a contributing cause of this finding is related to a cross-cutting aspect in the area of problem identification and resolution because Constellation did not promptly take actions to address safety issues in a timely manner, commensurate with its significance (P.1.a).

This finding is greater than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems (i.e., reactivity control) that respond to initiating events to prevent undesirable consequences and is related to attributes of procedure quality and human performance. The finding is of very low safety significance because it did not result in an actual loss of safety function because the plant was not in a condition that only relied on the startup rate trip function to protect against anticipated operational occurrences (AOOs). The startup rate trip function serves as a backup to the power level high and thermal margin/low pressure trip functions while the reactor is critical at low power levels, to protect against CEA rod withdrawal and boron dilution events. (Section 4OA3.5)
Inspection Report# : 2007002 *(pdf)*

Barrier Integrity

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement TS 3.6.3 Required Actions for Containment Isolation Valves
The inspectors identified a NCV of TS 3.6.3, Containment Isolation Valves, because Constellation did not implement actions as specified in TS 3.6.3. Specifically, Constellation did not include all containment isolation valves (CIVs) within the scope of TS requirements, which led to inadequate TS actions being taken for these valves when they became inoperable. Constellation entered this issue into their CAP as IRE-021-913. The planned corrective actions included a review of potential reportable conditions and a standing order for operation personnel to enter TS 3.6.3 for all CIVs as appropriate.

This finding is greater than minor because it is associated with the configuration control attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers such as containment protects the public from radio nuclide releases caused by accidents or events. The inspectors evaluated the significance of this finding using a SDP Phase 1 and Phase 2 analysis, which required evaluation using IMC 0609, Appendix H, because some of the inoperable valves identified in the reportability review involved an actual reduction in the defense-in-depth for the atmospheric pressure control of the reactor containment. Based on the results of the Phase 2 analysis, this finding was determined to have very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify issues in a timely manner commensurate with their safety significance. (P.1.a).
Inspection Report# : 2007003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Oct 26, 2007
Identified By: NRC
Item Type: FIN Finding
Overall Assessment of Licensee's Identification and Resolution of Problems
The inspection team concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Calvert Cliffs' staff identified problems and entered them into the corrective action program (CAP) at a low threshold, and Constellation had taken actions to address previous NRC findings related to attention to detail in identifying issues. The team determined that, in general, Constellation appropriately screened issues for operability and reportability, and prioritized issues commensurate with the safety significance of the problems. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors determined that corrective actions addressed the identified causes and were typically implemented in a timely manner. Although the team determined that the implementation of the CAP at Calvert Cliffs was generally effective, the inspectors identified some instances in which CAP guidance was inconsistently implemented. In particular, the inspectors noted problems with categorization of issues for evaluation, timeliness and quality of issue evaluation, and implementation of the maintenance rule program.

The inspection team determined that operating experience information was appropriately considered for applicability, and corrective and preventive actions were taken as needed. Self assessments, Quality and Performance Assessment audits, and other assessments were critical, thorough, and effective in identifying issues. Based on interviews, observations of plant activities, and reviews of the CAP and the Employees Concerns Program (ECP), the inspectors determined that site personnel were willing to raise safety issues and document them in the CAP.

Inspection Report# : 2007007 *(pdf)*

Last modified : February 04, 2008

Calvert Cliffs 1
1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Maintain the RCS Reduced Inventory Procedure
The inspectors identified a NCV of TS 5.4.1.a, Administrative Controls, when Constellation did not maintain an adequate procedure to drain and fill the RCS. Specifically, OP-7 permitted operation in a reduced RCS inventory condition without requiring redundant means of reactor level indication available. This is not in accordance with Nuclear Operations Administrative Procedure NO-1-103, Lower Mode Operations and Constellation's commitments in response to NRC Generic Letter (GL) 88-17, Loss of Decay Heat Removal. Constellation entered this issue into their CAP as IRE-022-121 and immediate corrective actions included the suspension of OP-7 pending resolution of this issue.

This finding is greater than minor because it is associated with the Initiating Event cornerstone attribute of equipment performance and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedure for operation in reduced RCS inventory increased the likelihood of the loss of RCS level indication and consequently a loss of residual heat removal (RHR) initiating event. The inspectors determined that this finding was of very low safety significance based on IMC 0609, Appendix G, Figure 1. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedure for operation with the RCS in reduced inventory was complete and accurate (H.2.c).
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Preclude Recurrence of a Significant Condition Adverse to Quality Associated with Power Operated Relief Valves
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," occurred because Constellation did not implement adequate corrective actions for a significant condition adverse to quality associated with the slow closure of a pressurizer power operated relief valve (PORV) due to a main disc guide being out of round. Specifically, Constellation did not perform an extent of condition review from a February 2006 event such that corrective actions would preclude recurrence of the issue. Subsequently, during a Unit 2 reactor trip on November 16, 2006, a PORV remained open longer than expected and resulted in a safety injection actuation signal. Constellation entered this issue into the corrective action program (CAP) for resolution. Immediate corrective actions for this issue included replacement of the main disc guide and an extent of condition review of the remaining PORVs on Unit 1 and Unit 2.

This finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that challenge critical safety functions. Inspectors evaluated the significance of the finding using an SDP Phase 2 analysis and determined the issue was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate an equipment malfunction such that the extent of condition was considered and the cause resolved (P.1.c of IMC 0305).
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Dec 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Vent Procedure for the SW Strainer Pressure Transmitters
An NRC-identified NCV of Technical Specifications (TS) 5.4.1.a, Procedures, was identified because Constellation did not establish and maintain an adequate procedure to vent and flush the saltwater (SW) strainer pressure transmitters and flow controllers. This resulted in an inoperable train of service water (SRW) following maintenance on the Unit 1 11B plate heat exchanger (HX). Specifically, Operating Instruction (OI) 29, SW System, did not provide operators and instrument maintenance (IM) technicians with adequate procedural guidance on venting and flushing the SW strainer instrumentation in order to mitigate potential air intrusion following maintenance activities on the service water heat exchangers (SRWHXs). The immediate corrective actions included instructions to extend the time that IM technicians vent and flush the SW strainer instrumentation. The planned corrective action is to review and revise procedure OI-29, as necessary, to incorporate extended venting and flushing guidance.

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 the SRW system that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because it is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train for greater than its TS allowed outage time, and does not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate prior SRWHX strainer venting issues to address and fully resolve problems in a timely manner commensurate with its safety significance (P.1.c per IMC 0305).

Inspection Report# : 2007005 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Procedures for EDG Maintenance
A Green, self-revealing, NCV of Technical Specifications (TS) 5.4.1.a, “Procedures,” was identified because Constellation did not establish and maintain emergency diesel generator (EDG) maintenance procedures that incorporated appropriate torque values for the engine top cover bolts specified in the vendor technical manual. During a monthly surveillance of the Unit 1 1B EDG, oil leaked from multiple loose engine top cover bolts onto the exhaust manifold and resulted in a small fire. Constellation entered this issue into their CAP as IRE-024-616. The immediate corrective actions included tightening the cover bolts to the vendor recommended torque value and verifying the proper torque values for the remaining EDGs.

This finding was similar to Example 4.f of Appendix E to IMC 0612 in that it involved a lube oil leak and a fire hazard. The finding is greater than minor because it associated with the procedure quality attribute under the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of the EDG to respond to initiating events to prevent undesirable consequences. Specifically, the loose engine cover bolts challenged the reliability of EDG and if left uncorrected, the inadequate EDG maintenance procedure could result in a more significant safety concern. The inspectors determined that the finding is of very low safety significance (Green) because the finding confirmed not to result in a loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal OE and vendor recommendations, through changes to station processes, procedures, and training programs (P.2.b per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Acceptance Limits for Thermal Performance Testing of Component Cooling Water Heat Exchangers
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for Units 1 and 2 because

Constellation did not incorporate acceptance limits contained in the design basis calculation into the thermal performance test procedure for the component cooling heat exchangers (CCHXs) or evaluate test results once the 11 CCHX exceeded the acceptance limits. The inspectors determined that the 11 CCHX exceeded the fouling factor for the tests performed in 2004 and 2006 but Constellation failed to evaluate those conditions for acceptability. Constellation's immediate corrective actions included performing an assessment to verify the operability of the 11 CCHX and entering this issue into the corrective action program (CAP).

The finding is greater than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability, availability, and reliability of the CCHXs to remove their design basis heat load under accident conditions. In addition, if left uncorrected, this finding would result in a more significant safety concern because the fouling factor for the 11 CCHX could exceed its acceptance limit prior to the next tube cleaning and cause the heat exchanger to become inoperable. The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify the issue in a timely manner in that the inadequate test procedure was not identified nor was a CR initiated once the limiting fouling factor was exceeded (P.1.a per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Demonstrate that the MSSV Performance Was Being Effectively Controlled per 10 CFR 50.65(a)(2).
The inspectors identified a NCV of 10 CFR 50.65(a)(2) because Constellation did not demonstrate that performance monitoring of the main steam safety valves (MSSVs) was being effectively controlled through the performance of appropriate preventive maintenance. Specifically, in February 2006, Constellation experienced repetitive and numerous issues associated with MSSV lift settings outside specified TSs. However, Constellation did not recognize the unsatisfactory performance monitoring of this system in accordance with the 10 CFR 50.65(a)(2) and place the system in (a)(1) status. Constellation entered this issue into their CAP for resolution.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of the MSSVs, which respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not trend and assess information from the CAP and other assessments to identify programmatic and common cause problems with the MSSVs (P.1.b).
Inspection Report# : 2007003 *(pdf)*

Barrier Integrity

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement TS 3.6.3 Required Actions for Containment Isolation Valves
The inspectors identified a NCV of TS 3.6.3, Containment Isolation Valves, because Constellation did not implement actions as specified in TS 3.6.3. Specifically, Constellation did not include all containment isolation valves (CIVs) within the scope of TS requirements, which led to inadequate TS actions being taken for these valves when they became inoperable. Constellation entered this issue into their CAP as IRE-021-913. The planned corrective actions included a review of potential reportable conditions and a standing order for operation personnel to enter TS 3.6.3 for all CIVs as appropriate.

This finding is greater than minor because it is associated with the configuration control attribute of the Barrier

Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers such as containment protects the public from radio nuclide releases caused by accidents or events. The inspectors evaluated the significance of this finding using a SDP Phase 1 and Phase 2 analysis, which required evaluation using IMC 0609, Appendix H, because some of the inoperable valves identified in the reportability review involved an actual reduction in the defense-in-depth for the atmospheric pressure control of the reactor containment. Based on the results of the Phase 2 analysis, this finding was determined to have very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify issues in a timely manner commensurate with their safety significance. (P.1.a).
Inspection Report# : 2007003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Oct 26, 2007
Identified By: NRC
Item Type: FIN Finding
Overall Assessment of Licensee's Identification and Resolution of Problems
The inspection team concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Calvert Cliffs' staff identified problems and entered them into the corrective action program (CAP) at a low threshold, and Constellation had taken actions to address previous NRC findings related to attention to detail in identifying issues. The team determined that, in general, Constellation appropriately screened issues for operability and reportability, and prioritized issues commensurate with the safety significance of the problems. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors determined that corrective actions addressed the identified causes and were typically implemented in a timely manner. Although the team determined that the implementation of the CAP at Calvert Cliffs was generally effective, the inspectors identified some instances in which CAP guidance was inconsistently implemented. In particular, the inspectors noted problems with categorization of issues for evaluation, timeliness and quality of issue evaluation, and implementation of the maintenance rule program.

The inspection team determined that operating experience information was appropriately considered for applicability, and corrective and preventive actions were taken as needed. Self assessments, Quality and Performance Assessment audits, and other assessments were critical, thorough, and effective in identifying issues. Based on interviews, observations of plant activities, and reviews of the CAP and the Employees Concerns Program (ECP), the inspectors determined that site personnel were willing to raise safety issues and document them in the CAP.

Inspection Report# : 2007007 *(pdf)*

Last modified : June 05, 2008

Calvert Cliffs 1
2Q/2008 Plant Inspection Findings

Initiating Events

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Draining and Venting the Reactor Coolant System
The inspectors identified an NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," because Constellation did not establish and maintain adequate procedures to vent the reactor vessel head (RVH). On February 25, 2008, operators drained the Unit 1 reactor vessel in preparation for removal of the RVH. When the RVH vent line was disconnected, the reactor coolant level unexpectedly decreased approximately 1 foot. Constellation determined that the unexpected change in level was most likely due to a RVH void that developed while draining the reactor coolant system (RCS) following the emptying of the steam generator tubes with compressed air. The inspectors identified that Constellation did not establish and maintain adequate procedures for venting a RVH void that may occur during draining of the RCS. Immediate corrective actions included restoring the reactor vessel level and entering this issue into their corrective action program (CAP) for resolution.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedures for venting the RVH increased the likelihood of the loss of RCS level control and consequently a loss of decay heat removal initiating event. The inspectors determined that this finding is of very low safety significance because a quantitative assessment was not required since the loss of RCS level control did not occur during mid-loop operations. The inspectors determined that this finding has a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedures for draining and venting the RCS were complete and accurate (H.2.c per IMC 0305).

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the safety Related 480V MCCs
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not correctly translate the design basis maximum expected temperature for the west penetration rooms into the specification for the safety related 480 volt (V) motor control centers (MCC) located on the 45 foot elevation of the auxiliary building of Units 1 and 2. As a result, Constellation did not recognize that the postulated loss of coolant accident (LOCA) temperature exceeded the design temperature limit for the MCCs. Constellation's immediate corrective action included entering this condition into their CAP and de-rating the MCCs to ensure the operability of the MCCs would be maintained during a design bases event. The planned corrective action includes a re-analysis of the maximum expected room temperature for the west penetration rooms.

The finding is more than minor because it is similar to example 3.i. in Appendix E of IMC 0612 in that the facility was not consistent with the Updated Final Safety Analysis Report (UFSAR) and the actual specification of the MCCs required that accident analysis calculations be re-performed to ensure that requirements were met. The finding is associated with the design control attribute of the Mitigating Systems cornerstone. The finding is of very low safety

significance because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. The inspectors determined that the performance deficiency is not indicative of current Constellation performance and thus there is no cross-cutting aspect associated with the finding.

Inspection Report# : 2008003 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Risk Assessment Associated with the 2A Emergency diesel Generator
The inspectors identified an NCV of 10 CFR Part 50.65 (a)(4) because Constellation did not assess and manage the increase in risk that resulted from maintenance activities on the alternate feeder breaker for the No. 21 4kV safety bus. On December 5, 2007, operators removed the 2A emergency diesel generator (EDG) from service in preparation for maintenance on the No. 21 4kV bus alternate feeder breaker. However, probabilistic risk analysis (PRA) services personnel were not aware that this maintenance activity affected the ability of the 2A EDG to load on the No. 21 4kV safety bus. As a result, the unavailability of the 2A EDG was not included as part of the risk assessment. Constellation reassessed the risk associated with this maintenance activity and entered this issue into their CAP. Planned corrective action included a re-evaluation of how Constellation models the impact of the work performed on the No. 21 4kV bus alternate feeder breaker and similar breakers.

The finding is more than minor because Constellation's risk assessment did not consider risk significant structures, systems, and components (SSCs) (i.e. 2A EDG) that were unavailable during the maintenance activity. The finding is associated with the configuration control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance because the incremental core damage probability (ICDP) was less than 1.0E-6. This finding has a cross-cutting aspect in the area of human performance, because Constellation did not appropriately plan and incorporate risk insights in work activities associated with the No. 21 4kV alternate feeder breaker maintenance (H.3.a).

Inspection Report# : 2008002 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Implement Scaffolding Procedure Requirement
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Constellation did not adequately implement scaffolding control requirements contained in MN-1-203, "Scaffold Control." Specifically, Constellation did not perform engineering evaluations for scaffolding constructed within the minimum allowed distance of safety-related equipment. Constellation entered this issue into their CAP for resolution, took prompt actions to correct the scaffolds, and provided evaluations to assess the affect of the scaffold on the equipment. The evaluations determined that the scaffolds did not adversely affect the plant equipment.

The inspectors determined that this finding is more than minor, because it is similar to example 4.a in Appendix E of IMC 0612 in that Constellation routinely did not perform evaluations for scaffolds constructed within the minimum allowed distance of safety related equipment. It is associated with the external factors and equipment performance attributes of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance, because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate expectations regarding work practices to workers who constructed scaffolding or to supervisors that routinely monitor these activities to follow procedural requirements (H.4.b).

Inspection Report# : 2008002 *(pdf)*

Significance: SL-IV Feb 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Report a Senior Licensed Operator Permanent Disability
The inspectors identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.74 for failing to report changes in a medical condition within 30 days. This requirement is implemented in Constellation Procedure NO-1-105, "Medical Requirements for Licensed Operators," Revision 4, Section 5.1 (D). As a result, a disqualifying medical condition for a Senior Reactor Operator (SRO) existed and was not reported to the NRC for approximately 18 months. Upon notification, the NRC determined this medical condition required a change to his license. Constellation personnel submitted the medical change documentation when they first became aware of the issue. In response, Region I added a no-solo license restriction for the individual's SRO license.

The violation is more than minor because it had the potential to impact the NRC's ability to perform its regulatory function since the NRC would have placed the restriction on the license eighteen months earlier. The issue was evaluated using the traditional enforcement process. This finding was of very low safety significance because at no time did the individual stand watch without additional personnel available, as required by the added license restriction. In addition, Constellation was timely in their reporting of the medical condition to the NRC when they received the updated information from the individual's primary care physician.

Inspection Report# : 2008007 *(pdf)*

Significance: G Dec 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Vent Procedure for the SW Strainer Pressure Transmitters
An NRC-identified NCV of Technical Specifications (TS) 5.4.1.a, Procedures, was identified because Constellation did not establish and maintain an adequate procedure to vent and flush the saltwater (SW) strainer pressure transmitters and flow controllers. This resulted in an inoperable train of service water (SRW) following maintenance on the Unit 1 11B plate heat exchanger (HX). Specifically, Operating Instruction (OI) 29, SW System, did not provide operators and instrument maintenance (IM) technicians with adequate procedural guidance on venting and flushing the SW strainer instrumentation in order to mitigate potential air intrusion following maintenance activities on the service water heat exchangers (SRWHXs). The immediate corrective actions included instructions to extend the time that IM technicians vent and flush the SW strainer instrumentation. The planned corrective action is to review and revise procedure OI-29, as necessary, to incorporate extended venting and flushing guidance.

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 the SRW system that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because it is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train for greater than its TS allowed outage time, and does not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate prior SRWHX strainer venting issues to address and fully resolve problems in a timely manner commensurate with its safety significance (P.1.c per IMC 0305).

Inspection Report# : 2007005 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Procedures for EDG Maintenance
A Green, self-revealing, NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," was identified because Constellation did not establish and maintain emergency diesel generator (EDG) maintenance procedures that incorporated appropriate torque values for the engine top cover bolts specified in the vendor technical manual. During a monthly surveillance of the Unit 1 1B EDG, oil leaked from multiple loose engine top cover bolts onto the exhaust manifold and resulted in a small fire. Constellation entered this issue into their CAP as IRE-024-616. The

immediate corrective actions included tightening the cover bolts to the vendor recommended torque value and verifying the proper torque values for the remaining EDGs.

This finding was similar to Example 4.f of Appendix E to IMC 0612 in that it involved a lube oil leak and a fire hazard. The finding is greater than minor because it associated with the procedure quality attribute under the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of the EDG to respond to initiating events to prevent undesirable consequences. Specifically, the loose engine cover bolts challenged the reliability of EDG and if left uncorrected, the inadequate EDG maintenance procedure could result in a more significant safety concern. The inspectors determined that the finding is of very low safety significance (Green) because the finding confirmed not to result in a loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal OE and vendor recommendations, through changes to station processes, procedures, and training programs (P.2.b per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Acceptance Limits for Thermal Performance Testing of Component Cooling Water Heat Exchangers
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for Units 1 and 2 because Constellation did not incorporate acceptance limits contained in the design basis calculation into the thermal performance test procedure for the component cooling heat exchangers (CCHXs) or evaluate test results once the 11 CCHX exceeded the acceptance limits. The inspectors determined that the 11 CCHX exceeded the fouling factor for the tests performed in 2004 and 2006 but Constellation failed to evaluate those conditions for acceptability. Constellation's immediate corrective actions included performing an assessment to verify the operability of the 11 CCHX and entering this issue into the corrective action program (CAP).

The finding is greater than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability, availability, and reliability of the CCHXs to remove their design basis heat load under accident conditions. In addition, if left uncorrected, this finding would result in a more significant safety concern because the fouling factor for the 11 CCHX could exceed its acceptance limit prior to the next tube cleaning and cause the heat exchanger to become inoperable. The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not identify the issue in a timely manner in that the inadequate test procedure was not identified nor was a CR initiated once the limiting fouling factor was exceeded (P.1.a per IMC 0305).

Inspection Report# : 2007004 *(pdf)*

Barrier Integrity

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
B.5.b Phase 2 and 3 Mitigating Strategy
This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.
Inspection Report# : 2008006 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Measures to Implement EALs
The inspectors identified an NCV of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR 50, Sections IV.B and IV.C because Constellation did not have a clear method to assess and determine the bay water level such that the emergency action level (EAL) classification process would declare an Unusual Event (UE) or Alert in a timely manner. Following a lower than normal tide event, the inspectors noted that operators measured bay water level downstream of the traveling screens from the intake concrete walking level to the bay surface with a weighted tape measure. The inspectors determined that this measurement was not a true representation of the actual bay water level. Constellation entered this issue into their CAP for resolution and took actions to establish compensatory measures to monitor the bay water level pending the development of permanent corrective actions.

The inspectors determined that this finding is more than minor because it is associated with the Emergency Preparedness cornerstone attributes of procedure quality and equipment and affects the cornerstone objective to ensure that Constellation is capable of implementing adequate measures to protect the health and safety of the public in the event of an emergency. Specifically, the lack of procedural guidance and readily available indication increases the likelihood of Constellation not being able to declare an EAL classification in a timely manner based on bay water level to protect the saltwater water pumps and other equipment needed for safe shutdown. The finding is of very low safety significance because the finding did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) Function. It is also similar to examples of green findings in Appendix B of section 4.4 in IMC 0609 in that the EAL classification process would not declare any Alert or Notification of an UE that should be declared. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate problems such that the resolution addresses issues and extent of conditions, as necessary (P.1.c per IMC 0305)
Inspection Report# : 2008003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Oct 26, 2007
Identified By: NRC
Item Type: FIN Finding
Overall Assessment of Licensee's Identification and Resolution of Problems
The inspection team concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Calvert Cliffs' staff identified problems and entered them into the corrective action program (CAP) at a low

threshold, and Constellation had taken actions to address previous NRC findings related to attention to detail in identifying issues. The team determined that, in general, Constellation appropriately screened issues for operability and reportability, and prioritized issues commensurate with the safety significance of the problems. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors determined that corrective actions addressed the identified causes and were typically implemented in a timely manner. Although the team determined that the implementation of the CAP at Calvert Cliffs was generally effective, the inspectors identified some instances in which CAP guidance was inconsistently implemented. In particular, the inspectors noted problems with categorization of issues for evaluation, timeliness and quality of issue evaluation, and implementation of the maintenance rule program.

The inspection team determined that operating experience information was appropriately considered for applicability, and corrective and preventive actions were taken as needed. Self assessments, Quality and Performance Assessment audits, and other assessments were critical, thorough, and effective in identifying issues. Based on interviews, observations of plant activities, and reviews of the CAP and the Employees Concerns Program (ECP), the inspectors determined that site personnel were willing to raise safety issues and document them in the CAP.

Inspection Report# : 2007007 *(pdf)*

Last modified : August 29, 2008

Calvert Cliffs 1
3Q/2008 Plant Inspection Findings

Initiating Events

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Draining and Venting the Reactor Coolant System
The inspectors identified an NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," because Constellation did not establish and maintain adequate procedures to vent the reactor vessel head (RVH). On February 25, 2008, operators drained the Unit 1 reactor vessel in preparation for removal of the RVH. When the RVH vent line was disconnected, the reactor coolant level unexpectedly decreased approximately 1 foot. Constellation determined that the unexpected change in level was most likely due to a RVH void that developed while draining the reactor coolant system (RCS) following the emptying of the steam generator tubes with compressed air. The inspectors identified that Constellation did not establish and maintain adequate procedures for venting a RVH void that may occur during draining of the RCS. Immediate corrective actions included restoring the reactor vessel level and entering this issue into their corrective action program (CAP) for resolution.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedures for venting the RVH increased the likelihood of the loss of RCS level control and consequently a loss of decay heat removal initiating event. The inspectors determined that this finding is of very low safety significance because a quantitative assessment was not required since the loss of RCS level control did not occur during mid-loop operations. The inspectors determined that this finding has a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedures for draining and venting the RCS were complete and accurate (H.2.c per IMC 0305).

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Sep 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a degraded 12 CCHX SW outlet valve positioner in a timely manner.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not promptly identify and correct a condition adverse to quality (CAQ) related to the Unit 1 No. 12 component cooling (CC) heat exchanger (HX) saltwater (SW) outlet control valve (1-CV-5208). Specifically, Constellation did not promptly identify and correct a degraded condition associated with the valve's positioner when 1-CV-5208 did not respond as expected during SW flow verifications on May 13, 2008. Consequently, on May 21, 2008, operators declared the valve inoperable because the valve went from full shut to full open with only 25 percent indicated on the controller. The valve responded erratically because the spindle for the valve's positioner corroded and would not rotate to control the position of the valve. The corrosion mechanism was due to SW leaking from the valve packing to the actuator housing and onto the positioner. Constellation entered this issue into their corrective action program (CAP) for resolution as IRE-031-916. The immediate corrective actions following the May 21, 2008 event included the removal, inspection, and refurbishment of the positioner. The planned corrective action includes a modification to prevent SW from leaking outside the actuator housing and to perform preventive maintenance activities to detect degradation of the SW control valve positioners. This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems (i.e. component heat removal) that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using Phase 2 and 3 analyses and determined that the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate SW flow control valve issues.
Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 29, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation

Failure to Establish and Maintain Adequate Procedures for 4 kV Circuit Breaker Maintenance
A self-revealing, NCV of Technical Specification (TS) 5.4.1.a, "Procedures," was identified because Constellation did not adequately establish and maintain electrical maintenance procedures for 4 kV circuit breakers such that the procedures incorporated torque values and verification steps to ensure the adjustment setscrew for the trip armature was properly tightened. During a surveillance test, on June 21, 2008, the adjustment setscrew backed out which prevented the 13 SRW pump breaker from opening. Constellation entered this issue into their CAP for resolution as IRE-032-517. The immediate corrective actions following the event included the replacement of the locking setscrew and trip coil. The planned corrective actions included the revision of maintenance orders and procedures to ensure that technicians perform peer verifications and check the tightness of the adjustment setscrew following maintenance activities. 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. The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single Train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal and external OE to change station processes, procedures, and training programs when similar issues of internal and external events occurred on 4 kV circuit breakers that involved inadequate maintenance procedures.
Inspection Report# : 2008004 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the safety Related 480V MCCs
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not correctly translate the design basis maximum expected temperature for the west penetration rooms into the specification for the safety related 480 volt (V) motor control centers (MCC) located on the 45 foot elevation of the auxiliary building of Units 1 and 2. As a result, Constellation did not recognize that the postulated loss of coolant accident (LOCA) temperature exceeded the design temperature limit for the MCCs. Constellation's immediate corrective action included entering this condition into their CAP and de-rating the MCCs to ensure the operability of the MCCs would be maintained during a design bases event. The planned corrective action includes a re-analysis of the maximum expected room temperature for the west penetration rooms.

The finding is more than minor because it is similar to example 3.i. in Appendix E of IMC 0612 in that the facility was not consistent with the Updated Final Safety Analysis Report (UFSAR) and the actual specification of the MCCs required that accident analysis calculations be re-performed to ensure that requirements were met. The finding is associated with the design control attribute of the Mitigating Systems cornerstone. The finding is of very low safety significance because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. The inspectors determined that the performance deficiency is not indicative of current Constellation performance and thus there is no cross-cutting aspect associated with the finding.

Inspection Report# : 2008003 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Risk Assessment Associated with the 2A Emergency diesel Generator
The inspectors identified an NCV of 10 CFR Part 50.65 (a)(4) because Constellation did not assess and manage the increase in risk that resulted from maintenance activities on the alternate feeder breaker for the No. 21 4kV safety bus. On December 5, 2007, operators removed the 2A emergency diesel generator (EDG) from service in preparation for maintenance on the No. 21 4kV bus alternate feeder breaker. However, probabilistic risk analysis (PRA) services personnel were not aware that this maintenance activity affected the ability of the 2A EDG to load on the No. 21 4kV safety bus. As a result, the unavailability of the 2A EDG was not included as part of the risk assessment. Constellation reassessed the risk associated with this maintenance activity and entered this issue into their CAP. Planned corrective action included a re-evaluation of how Constellation models the impact of the work performed on the No. 21 4kV bus alternate feeder breaker and similar breakers.

The finding is more than minor because Constellation's risk assessment did not consider risk significant structures, systems, and components (SSCs) (i.e. 2A EDG) that were unavailable during the maintenance activity. The finding is associated with the configuration control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance because the incremental core damage probability (ICDP) was less than 1.0E-6. This finding has a cross-cutting aspect in the area of human performance, because Constellation did not appropriately plan and incorporate risk insights in work activities associated with the No. 21 4kV alternate feeder breaker maintenance (H.3.a).

Inspection Report# : 2008002 *(pdf)*

Significance: G May 23, 2008

Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Implement Scaffolding Procedure Requirement
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Constellation did not adequately implement scaffolding control requirements contained in MN-1-203, "Scaffold Control." Specifically, Constellation did not perform engineering evaluations for scaffolding constructed within the minimum allowed distance of safety-related equipment. Constellation entered this issue into their CAP for resolution, took prompt actions to correct the scaffolds, and provided evaluations to assess the affect of the scaffold on the equipment. The evaluations determined that the scaffolds did not adversely affect the plant equipment.

The inspectors determined that this finding is more than minor, because it is similar to example 4.a in Appendix E of IMC 0612 in that Constellation routinely did not perform evaluations for scaffolds constructed within the minimum allowed distance of safety related equipment. It is associated with the external factors and equipment performance attributes of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance, because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate expectations regarding work practices to workers who constructed scaffolding or to supervisors that routinely monitor these activities to follow procedural requirements (H.4.b).

Inspection Report# : 2008002 *(pdf)*

Significance: SL-IV Feb 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Report a Senior Licensed Operator Permanent Disability
The inspectors identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.74 for failing to report changes in a medical condition within 30 days. This requirement is implemented in Constellation Procedure NO-1-105, "Medical Requirements for Licensed Operators," Revision 4, Section 5.1 (D). As a result, a disqualifying medical condition for a Senior Reactor Operator (SRO) existed and was not reported to the NRC for approximately 18 months. Upon notification, the NRC determined this medical condition required a change to his license. Constellation personnel submitted the medical change documentation when they first became aware of the issue. In response, Region I added a no-solo license restriction for the individual's SRO license.

The violation is more than minor because it had the potential to impact the NRC's ability to perform its regulatory function since the NRC would have placed the restriction on the license eighteen months earlier. The issue was evaluated using the traditional enforcement process. This finding was of very low safety significance because at no time did the individual stand watch without additional personnel available, as required by the added license restriction. In addition, Constellation was timely in their reporting of the medical condition to the NRC when they received the updated information from the individual's primary care physician.

Inspection Report# : 2008007 *(pdf)*

Significance: G Dec 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Vent Procedure for the SW Strainer Pressure Transmitters
An NRC-identified NCV of Technical Specifications (TS) 5.4.1.a, Procedures, was identified because Constellation did not establish and maintain an adequate procedure to vent and flush the saltwater (SW) strainer pressure transmitters and flow controllers. This resulted in an inoperable train of service water (SRW) following maintenance on the Unit 1 11B plate heat exchanger (HX). Specifically, Operating Instruction (OI) 29, SW System, did not provide operators and instrument maintenance (IM) technicians with adequate procedural guidance on venting and flushing the SW strainer instrumentation in order to mitigate potential air intrusion following maintenance activities on the service water heat exchangers (SRWHXs). The immediate corrective actions included instructions to extend the time that IM technicians vent and flush the SW strainer instrumentation. The planned corrective action is to review and revise procedure OI-29, as necessary, to incorporate extended venting and flushing guidance.

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 the SRW system that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because it is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train for greater than its TS allowed outage time, and does not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate prior SRWHX strainer venting issues to address and fully resolve problems in a timely manner commensurate with its safety significance (P.1.c per IMC 0305).

Inspection Report# : 2007005 *(pdf)*

Barrier Integrity

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
B.5.b Phase 2 and 3 Mitigating Strategy
This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.
Inspection Report# : 2008006 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Measures to Implement EALs
The inspectors identified an NCV of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR 50, Sections IV.B and IV.C because Constellation did not have a clear method to assess and determine the bay water level such that the emergency action level (EAL) classification process would declare an Unusual Event (UE) or Alert in a timely manner. Following a lower than normal tide event, the inspectors noted that operators measured bay water level downstream of the traveling screens from the intake concrete walking level to the bay surface with a weighted tape measure. The inspectors determined that this measurement was not a true representation of the actual bay water level. Constellation entered this issue into their CAP for resolution and took actions to establish compensatory measures to monitor the bay water level pending the development of permanent corrective actions.

The inspectors determined that this finding is more than minor because it is associated with the Emergency Preparedness cornerstone attributes of procedure quality and equipment and affects the cornerstone objective to ensure that Constellation is capable of implementing adequate measures to protect the health and safety of the public in the event of an emergency. Specifically, the lack of procedural guidance and readily available indication increases the likelihood of Constellation not being able to declare an EAL classification in a timely manner based on bay water level to protect the saltwater water pumps and other equipment needed for safe shutdown. The finding is of very low safety significance because the finding did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) Function. It is also similar to examples of green findings in Appendix B of section 4.4 in IMC 0609 in that the EAL classification process would not declare any Alert or Notification of an UE that should be declared. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate problems such that the resolution addresses issues and extent of conditions, as necessary (P.1.c per IMC 0305)
Inspection Report# : 2008003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Oct 26, 2007
Identified By: NRC
Item Type: FIN Finding
Overall Assessment of Licensee's Identification and Resolution of Problems
The inspection team concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Calvert Cliffs' staff identified problems and entered them into the corrective action program (CAP) at a low threshold, and Constellation had taken actions to address previous NRC findings related to attention to detail in identifying issues. The team determined that, in general, Constellation appropriately screened issues for operability and reportability, and prioritized issues commensurate with the safety significance of the problems. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors determined that corrective actions addressed the identified causes and were typically implemented in a timely manner. Although the team determined that the implementation of the CAP at Calvert Cliffs was generally effective, the inspectors identified some instances in which CAP guidance was inconsistently implemented. In particular, the inspectors noted problems with categorization of issues for evaluation, timeliness and quality of issue evaluation, and implementation of the maintenance rule program.

The inspection team determined that operating experience information was appropriately considered for applicability, and corrective and preventive actions were taken as needed. Self assessments, Quality and Performance Assessment audits, and other assessments were critical, thorough, and effective in identifying issues. Based on interviews, observations of plant activities, and reviews of the CAP and the Employees Concerns Program (ECP), the inspectors determined that site personnel were willing to raise safety issues and document them in the CAP.

Inspection Report# : 2007007 *(pdf)*

Last modified : November 26, 2008

Calvert Cliffs 1
4Q/2008 Plant Inspection Findings

Initiating Events

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Draining and Venting the Reactor Coolant System
The inspectors identified an NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," because Constellation did not establish and maintain adequate procedures to vent the reactor vessel head (RVH). On February 25, 2008, operators drained the Unit 1 reactor vessel in preparation for removal of the RVH. When the RVH vent line was disconnected, the reactor coolant level unexpectedly decreased approximately 1 foot. Constellation determined that the unexpected change in level was most likely due to a RVH void that developed while draining the reactor coolant system (RCS) following the emptying of the steam generator tubes with compressed air. The inspectors identified that Constellation did not establish and maintain adequate procedures for venting a RVH void that may occur during draining of the RCS. Immediate corrective actions included restoring the reactor vessel level and entering this issue into their corrective action program (CAP) for resolution.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedures for venting the RVH increased the likelihood of the loss of RCS level control and consequently a loss of decay heat removal initiating event. The inspectors determined that this finding is of very low safety significance because a quantitative assessment was not required since the loss of RCS level control did not occur during mid-loop operations. The inspectors determined that this finding has a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedures for draining and venting the RCS were complete and accurate (H.2.c per IMC 0305).

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Auxiliary Feedwater Pump Room Temperature.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not provide design control measures for verifying the adequacy of a design calculation used to determine the maximum initial room temperature for the auxiliary feedwater (AFW) pump room. Specifically, Constellation used non-conservative inputs and assumptions in the design calculation that resulted in Constellation not recognizing that the design basis accident (DBA) temperature limit could have been exceeded. The AFW pump room emergency ventilation system must be established prior to exceeding a specified maximum initial room temperature to ensure that the AFW pump room temperature would not exceed the design limit of 130°F. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included establishing compensatory requirements for initiating emergency ventilation and conducting a re-analysis of the design calculation. The planned corrective action includes a modification to install a new automatic starting emergency ventilation system.

This finding is more than minor because it is similar to example 3.j. in Appendix E of IMC 0612 in that the non-conservative inputs and assumptions resulted in a condition where it created reasonable doubt on the operability of the turbine-driven AFW (TDAFW) pumps . The finding is associated with the design control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance (Green) because the finding is a design and qualification deficiency confirmed not to result in the loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." There is no crosscutting aspect associated with this finding.

Inspection Report# : 2008005 *(pdf)*

Significance: G Dec 30, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Untimely Corrective Actions Associated with 480 Volt Power Supply Disconnects.
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because Constellation did not take timely corrective actions following the identification of degraded 480 volt power supply handswitch disconnects. This led to the failure of the Unit 1 No. 13 component cooling (CC) pump to start during performance of a surveillance test. The inspectors noted that Constellation had previously identified handswitch disconnects failures in 2006 and 2007. Immediate corrective action included replacing the handswitch disconnect for the 13 CC pump, conducting an extent of condition review, and entering this condition into their CAP.

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 to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the finding does not represent the loss of system safety function, does not represent actual loss of safety function of a single train for greater than its technical specification allowed outage time, and does not screen as potentially risk significant due to external events. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective actions to address safety issues associated with handswitch disconnects in a timely manner commensurate with their safety significance and complexity (P.1.d per IMC 0305).

Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a degraded 12 CCHX SW outlet valve positioner in a timely manner.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not promptly identify and correct a condition adverse to quality (CAQ) related to the Unit 1 No. 12 component cooling (CC) heat exchanger (HX) saltwater (SW) outlet control valve (1-CV-5208). Specifically, Constellation did not promptly identify and correct a degraded condition associated with the valve's positioner when 1-CV-5208 did not respond as expected during SW flow verifications on May 13, 2008. Consequently, on May 21, 2008, operators declared the valve inoperable because the valve went from full shut to full open with only 25 percent indicated on the controller. The valve responded erratically because the spindle for the valve's positioner corroded and would not rotate to control the position of the valve. The corrosion mechanism was due to SW leaking from the valve packing to the actuator housing and onto the positioner. Constellation entered this issue into their corrective action program (CAP) for resolution as IRE-031-916. The immediate corrective actions following the May 21, 2008 event included the removal, inspection, and refurbishment of the positioner. The planned corrective action includes a modification to prevent SW from leaking outside the actuator housing and to perform preventive maintenance activities to detect degradation of the SW control valve positioners.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems (i.e. component heat removal) that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using Phase 2 and 3 analyses and determined that the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate SW flow control valve issues.
Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 29, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Maintain Adequate Procedures for 4 kV Circuit Breaker Maintenance
A self-revealing, NCV of Technical Specification (TS) 5.4.1.a, "Procedures," was identified because Constellation did not adequately establish and maintain electrical maintenance procedures for 4 kV circuit breakers such that the procedures incorporated torque values and verification steps to ensure the adjustment setscrew for the trip armature was properly tightened. During a surveillance test, on June 21, 2008, the adjustment setscrew backed out which prevented the 13 SRW pump breaker from opening. Constellation entered this issue into their CAP for resolution as IRE-032-517. The immediate corrective actions following the event included the replacement of the locking setscrew and trip coil. The planned corrective actions included the revision of maintenance orders and procedures to ensure that technicians perform peer verifications and check the tightness of the adjustment setscrew following maintenance activities.

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. The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single Train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal and external OE to change station processes, procedures, and training programs when similar issues of internal and external events occurred on 4 kV circuit breakers that involved inadequate maintenance procedures.
Inspection Report# : 2008004 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the safety Related 480V MCCs
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not correctly translate the design basis maximum expected temperature for the west penetration rooms into the specification for the safety related 480 volt (V) motor control centers (MCC) located on the 45 foot elevation of the auxiliary building of Units 1 and 2. As a result, Constellation did not recognize that the postulated loss of coolant accident (LOCA) temperature exceeded the design temperature limit for the MCCs. Constellation's immediate corrective action included entering this condition into their CAP and de-rating the MCCs to ensure the operability of the MCCs would be maintained during a design bases event. The planned corrective action includes a re-analysis of the maximum expected room temperature for the west penetration rooms.

The finding is more than minor because it is similar to example 3.i. in Appendix E of IMC 0612 in that the facility was not consistent with the Updated Final Safety Analysis Report (UFSAR) and the actual specification of the MCCs required that accident analysis calculations be re-performed to ensure that requirements were met. The finding is associated with the design control attribute of the Mitigating Systems cornerstone. The finding is of very low safety significance because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. The inspectors determined that the performance deficiency is not indicative of current Constellation performance and thus there is no cross-cutting aspect

associated with the finding.

Inspection Report# : 2008003 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Risk Assessment Associated with the 2A Emergency diesel Generator
The inspectors identified an NCV of 10 CFR Part 50.65 (a)(4) because Constellation did not assess and manage the increase in risk that resulted from maintenance activities on the alternate feeder breaker for the No. 21 4kV safety bus. On December 5, 2007, operators removed the 2A emergency diesel generator (EDG) from service in preparation for maintenance on the No. 21 4kV bus alternate feeder breaker. However, probabilistic risk analysis (PRA) services personnel were not aware that this maintenance activity affected the ability of the 2A EDG to load on the No. 21 4kV safety bus. As a result, the unavailability of the 2A EDG was not included as part of the risk assessment. Constellation reassessed the risk associated with this maintenance activity and entered this issue into their CAP. Planned corrective action included a re-evaluation of how Constellation models the impact of the work performed on the No. 21 4kV bus alternate feeder breaker and similar breakers.

The finding is more than minor because Constellation's risk assessment did not consider risk significant structures, systems, and components (SSCs) (i.e. 2A EDG) that were unavailable during the maintenance activity. The finding is associated with the configuration control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance because the incremental core damage probability (ICDP) was less than 1.0E-6. This finding has a cross-cutting aspect in the area of human performance, because Constellation did not appropriately plan and incorporate risk insights in work activities associated with the No. 21 4kV alternate feeder breaker maintenance (H.3.a).

Inspection Report# : 2008002 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Implement Scaffolding Procedure Requirement
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Constellation did not adequately implement scaffolding control requirements contained in MN-1-203, "Scaffold Control." Specifically, Constellation did not perform engineering evaluations for scaffolding constructed within the minimum allowed distance of safety-related equipment. Constellation entered this issue into their CAP for resolution, took prompt actions to correct the scaffolds, and provided evaluations to assess the affect of the scaffold on the equipment. The evaluations determined that the scaffolds did not adversely affect the plant equipment.

The inspectors determined that this finding is more than minor, because it is similar to example 4.a in Appendix E of IMC 0612 in that Constellation routinely did not perform evaluations for scaffolds constructed within the minimum allowed distance of safety related equipment. It is associated with the external factors and equipment performance attributes of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance, because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate expectations regarding work practices to workers who constructed scaffolding or to supervisors that routinely monitor these activities to follow procedural requirements (H.4.b).

Inspection Report# : 2008002 *(pdf)*

Significance: SL-IV Feb 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Report a Senior Licensed Operator Permanent Disability
The inspectors identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.74 for failing to report changes in a medical condition within 30 days. This requirement is implemented in Constellation Procedure NO-1-105, "Medical Requirements for Licensed Operators," Revision 4, Section 5.1 (D). As a result, a disqualifying medical condition for a Senior Reactor Operator (SRO) existed and was not reported to the NRC for approximately 18 months. Upon notification, the NRC determined this medical condition required a change to his license. Constellation personnel submitted the medical change documentation when they first became aware of the issue. In response, Region I added a no-solo license restriction for the individual's SRO license.

The violation is more than minor because it had the potential to impact the NRC's ability to perform its regulatory function since the NRC would have placed the restriction on the license eighteen months earlier. The issue was evaluated using the traditional enforcement process. This finding was of very low safety significance because at no time did the individual stand watch without additional personnel available, as required by the added license restriction. In addition, Constellation was timely in their reporting of the medical condition to the NRC when they received the updated information from the individual's primary care physician.

Inspection Report# : 2008007 *(pdf)*

Barrier Integrity

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
B.5.b Phase 2 and 3 Mitigating Strategy
This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.
Inspection Report# : 2008006 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Measures to Implement EALs
The inspectors identified an NCV of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR 50, Sections IV.B and IV.C because Constellation did not have a clear method to assess and determine the bay water level such that the emergency action level (EAL) classification process would declare an Unusual Event (UE) or Alert in a timely manner. Following a lower than normal tide event, the inspectors noted that operators measured bay water level downstream of the traveling screens from the intake concrete walking level to the bay surface with a weighted tape measure. The inspectors determined that this measurement was not a true representation of the actual bay water level. Constellation entered this issue into their CAP for resolution and took actions to establish compensatory measures to

monitor the bay water level pending the development of permanent corrective actions.

The inspectors determined that this finding is more than minor because it is associated with the Emergency Preparedness cornerstone attributes of procedure quality and equipment and affects the cornerstone objective to ensure that Constellation is capable of implementing adequate measures to protect the health and safety of the public in the event of an emergency. Specifically, the lack of procedural guidance and readily available indication increases the likelihood of Constellation not being able to declare an EAL classification in a timely manner based on bay water level to protect the saltwater water pumps and other equipment needed for safe shutdown. The finding is of very low safety significance because the finding did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) Function. It is also similar to examples of green findings in Appendix B of section 4.4 in IMC 0609 in that the EAL classification process would not declare any Alert or Notification of an UE that should be declared. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate problems such that the resolution addresses issues and extent of conditions, as necessary (P.1.c per IMC 0305)
Inspection Report# : 2008003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : April 07, 2009

Calvert Cliffs 1
1Q/2009 Plant Inspection Findings

Initiating Events

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Draining and Venting the Reactor Coolant System
The inspectors identified an NCV of Technical Specifications (TS) 5.4.1.a, "Procedures," because Constellation did not establish and maintain adequate procedures to vent the reactor vessel head (RVH). On February 25, 2008, operators drained the Unit 1 reactor vessel in preparation for removal of the RVH. When the RVH vent line was disconnected, the reactor coolant level unexpectedly decreased approximately 1 foot. Constellation determined that the unexpected change in level was most likely due to a RVH void that developed while draining the reactor coolant system (RCS) following the emptying of the steam generator tubes with compressed air. The inspectors identified that Constellation did not establish and maintain adequate procedures for venting a RVH void that may occur during draining of the RCS. Immediate corrective actions included restoring the reactor vessel level and entering this issue into their corrective action program (CAP) for resolution.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the inadequate procedures for venting the RVH increased the likelihood of the loss of RCS level control and consequently a loss of decay heat removal initiating event. The inspectors determined that this finding is of very low safety significance because a quantitative assessment was not required since the loss of RCS level control did not occur during mid-loop operations. The inspectors determined that this finding has a cross-cutting aspect in the area of human performance because Constellation did not ensure that the procedures for draining and venting the RCS were complete and accurate (H.2.c per IMC 0305).

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Auxiliary Feedwater Pump Room Temperature.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not provide design control measures for verifying the adequacy of a design calculation used to determine the maximum initial room temperature for the auxiliary feedwater (AFW) pump room. Specifically, Constellation used non-conservative inputs and assumptions in the design calculation that resulted in Constellation not recognizing that the design basis accident (DBA) temperature limit could have been exceeded. The AFW pump room emergency ventilation system must be established prior to exceeding a specified maximum initial room temperature to ensure that the AFW pump room temperature would not exceed the design limit of 130°F. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included establishing compensatory requirements for initiating emergency ventilation and conducting a re-analysis of the design calculation. The planned corrective action includes a modification to install a new automatic starting emergency ventilation system.

This finding is more than minor because it is similar to example 3.j. in Appendix E of IMC 0612 in that the non-conservative inputs and assumptions resulted in a condition where it created reasonable doubt on the operability of the turbine-driven AFW (TDAFW) pumps . The finding is associated with the design control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance (Green) because the finding is a design and qualification deficiency confirmed not to result in the loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." There is no crosscutting aspect associated with this finding.

Inspection Report# : 2008005 *(pdf)*

Significance: G Dec 30, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Untimely Corrective Actions Associated with 480 Volt Power Supply Disconnects.
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because Constellation did not take timely corrective actions following the identification of degraded 480 volt power supply handswitch disconnects. This led to the failure of the Unit 1 No. 13 component cooling (CC) pump to start during performance of a surveillance test. The inspectors noted that Constellation had previously identified handswitch disconnects failures in 2006 and 2007. Immediate corrective action included replacing the handswitch disconnect for the 13 CC pump, conducting an extent of condition review, and entering this condition into their CAP.

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 to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the finding does not represent the loss of system safety function, does not represent actual loss of safety function of a single train for greater than its technical specification allowed outage time, and does not screen as potentially risk significant due to external events. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective actions to address safety issues associated with handswitch disconnects in a timely manner commensurate with their safety significance and complexity (P.1.d per IMC 0305).

Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a degraded 12 CCHX SW outlet valve positioner in a timely manner.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not promptly identify and correct a condition adverse to quality (CAQ) related to the Unit 1 No. 12 component cooling (CC) heat exchanger (HX) saltwater (SW) outlet control valve (1-CV-5208). Specifically, Constellation did not promptly identify and correct a degraded condition associated with the valve's positioner when 1-CV-5208 did not respond as expected during SW flow verifications on May 13, 2008. Consequently, on May 21, 2008, operators declared the valve inoperable because the valve went from full shut to full open with only 25 percent indicated on the controller. The valve responded erratically because the spindle for the valve's positioner corroded and would not rotate to control the position of the valve. The corrosion mechanism was due to SW leaking from the valve packing to the actuator housing and onto the positioner. Constellation entered this issue into their corrective action program (CAP) for resolution as IRE-031-916. The immediate corrective actions following the May 21, 2008 event included the removal, inspection, and refurbishment of the positioner. The planned corrective action includes a modification to prevent SW from leaking outside the actuator housing and to perform preventive maintenance activities to detect degradation of the SW control valve positioners.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems (i.e. component heat removal) that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using Phase 2 and 3 analyses and determined that the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate SW flow control valve issues.
Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 29, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Maintain Adequate Procedures for 4 kV Circuit Breaker Maintenance
A self-revealing, NCV of Technical Specification (TS) 5.4.1.a, "Procedures," was identified because Constellation did not adequately establish and maintain electrical maintenance procedures for 4 kV circuit breakers such that the procedures incorporated torque values and verification steps to ensure the adjustment setscrew for the trip armature was properly tightened. During a surveillance test, on June 21, 2008, the adjustment setscrew backed out which prevented the 13 SRW pump breaker from opening. Constellation entered this issue into their CAP for resolution as IRE-032-517. The immediate corrective actions following the event included the replacement of the locking setscrew and trip coil. The planned corrective actions included the revision of maintenance orders and procedures to ensure that technicians perform peer verifications and check the tightness of the adjustment setscrew following maintenance activities.

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. The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single Train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal and external OE to change station processes, procedures, and training programs when similar issues of internal and external events occurred on 4 kV circuit breakers that involved inadequate maintenance procedures.
Inspection Report# : 2008004 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the safety Related 480V MCCs
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not correctly translate the design basis maximum expected temperature for the west penetration rooms into the specification for the safety related 480 volt (V) motor control centers (MCC) located on the 45 foot elevation of the auxiliary building of Units 1 and 2. As a result, Constellation did not recognize that the postulated loss of coolant accident (LOCA) temperature exceeded the design temperature limit for the MCCs. Constellation's immediate corrective action included entering this condition into their CAP and de-rating the MCCs to ensure the operability of the MCCs would be maintained during a design bases event. The planned corrective action includes a re-analysis of the maximum expected room temperature for the west penetration rooms.

The finding is more than minor because it is similar to example 3.i. in Appendix E of IMC 0612 in that the facility was not consistent with the Updated Final Safety Analysis Report (UFSAR) and the actual specification of the MCCs required that accident analysis calculations be re-performed to ensure that requirements were met. The finding is associated with the design control attribute of the Mitigating Systems cornerstone. The finding is of very low safety significance because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. The inspectors determined that the performance deficiency is not indicative of current Constellation performance and thus there is no cross-cutting aspect

associated with the finding.

Inspection Report# : 2008003 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Risk Assessment Associated with the 2A Emergency diesel Generator
The inspectors identified an NCV of 10 CFR Part 50.65 (a)(4) because Constellation did not assess and manage the increase in risk that resulted from maintenance activities on the alternate feeder breaker for the No. 21 4kV safety bus. On December 5, 2007, operators removed the 2A emergency diesel generator (EDG) from service in preparation for maintenance on the No. 21 4kV bus alternate feeder breaker. However, probabilistic risk analysis (PRA) services personnel were not aware that this maintenance activity affected the ability of the 2A EDG to load on the No. 21 4kV safety bus. As a result, the unavailability of the 2A EDG was not included as part of the risk assessment. Constellation reassessed the risk associated with this maintenance activity and entered this issue into their CAP. Planned corrective action included a re-evaluation of how Constellation models the impact of the work performed on the No. 21 4kV bus alternate feeder breaker and similar breakers.

The finding is more than minor because Constellation's risk assessment did not consider risk significant structures, systems, and components (SSCs) (i.e. 2A EDG) that were unavailable during the maintenance activity. The finding is associated with the configuration control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance because the incremental core damage probability (ICDP) was less than 1.0E-6. This finding has a cross-cutting aspect in the area of human performance, because Constellation did not appropriately plan and incorporate risk insights in work activities associated with the No. 21 4kV alternate feeder breaker maintenance (H.3.a).

Inspection Report# : 2008002 *(pdf)*

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Implement Scaffolding Procedure Requirement
The inspectors identified a finding of very low safety significance associated with an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Constellation did not adequately implement scaffolding control requirements contained in MN-1-203, "Scaffold Control." Specifically, Constellation did not perform engineering evaluations for scaffolding constructed within the minimum allowed distance of safety-related equipment. Constellation entered this issue into their CAP for resolution, took prompt actions to correct the scaffolds, and provided evaluations to assess the affect of the scaffold on the equipment. The evaluations determined that the scaffolds did not adversely affect the plant equipment.

The inspectors determined that this finding is more than minor, because it is similar to example 4.a in Appendix E of IMC 0612 in that Constellation routinely did not perform evaluations for scaffolds constructed within the minimum allowed distance of safety related equipment. It is associated with the external factors and equipment performance attributes of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance, because the finding is not a design or qualification deficiency, did not represent a loss of a safety function, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate expectations regarding work practices to workers who constructed scaffolding or to supervisors that routinely monitor these activities to follow procedural requirements (H.4.b).

Inspection Report# : 2008002 *(pdf)*

Barrier Integrity

Significance: G May 23, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
B.5.b Phase 2 and 3 Mitigating Strategy
This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.
Inspection Report# : 2008006 *(pdf)*

Emergency Preparedness

Significance: W Jan 14, 2009
Identified By: Licensee
Item Type: AV Apparent Violation
Failure to Maintain Emergency Plans
Constellation identified an apparent violation associated with the failure to meet emergency preparedness planning standard 10 CFR 50.47(b)(4). For the period of August 31, 2005, until April 10, 2008, the emergency action level (EAL) table's fission product barrier matrix contained an inaccurate threshold associated with identifying the potential loss of the containment barrier. The error was not identified by Constellation prior to implementation of the revised EAL table. Constellation evaluated this condition and took prompt actions to correct the inaccurate EAL.

The finding was more than minor because it was associated with the procedure quality (EAL changes) attribute of the Emergency Preparedness cornerstone and affected the associated cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding is associated with risk significant planning standard 10 CFR 50.47(b)(4) and 10 CFR 50 Appendix E, IV.B, "Assessment Actions." The NRC determined that the finding is preliminarily White, a finding with low to moderate safety significance, that may require additional NRC inspection. Using Emergency Preparedness Significance Determination Process, Inspection Manual Chapter (IMC) 0609, Appendix B, Sheet 1, "Failure to Comply," the finding was determined to be a risk significant planning standard (RSPS) problem and an RSPS degraded function (White). Additionally, IMC 0609, Appendix B contains an example of Loss of RSPS Function for 10 CFR 50.47 (b)(4); more than one Alert, or any Site Area Emergency would not be declared that should be declared, resulting in a White finding. There is no crosscutting aspect associated with this finding since it is not reflective of current licensee performance.

Inspection Report# : 2008502 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Measures to Implement EALs
The inspectors identified an NCV of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR 50, Sections IV.B and IV.C because Constellation did not have a clear method to assess and determine the bay water level such that the emergency action level (EAL) classification process would declare an Unusual Event (UE) or Alert in a timely

manner. Following a lower than normal tide event, the inspectors noted that operators measured bay water level downstream of the traveling screens from the intake concrete walking level to the bay surface with a weighted tape measure. The inspectors determined that this measurement was not a true representation of the actual bay water level. Constellation entered this issue into their CAP for resolution and took actions to establish compensatory measures to monitor the bay water level pending the development of permanent corrective actions.

The inspectors determined that this finding is more than minor because it is associated with the Emergency Preparedness cornerstone attributes of procedure quality and equipment and affects the cornerstone objective to ensure that Constellation is capable of implementing adequate measures to protect the health and safety of the public in the event of an emergency. Specifically, the lack of procedural guidance and readily available indication increases the likelihood of Constellation not being able to declare an EAL classification in a timely manner based on bay water level to protect the saltwater water pumps and other equipment needed for safe shutdown. The finding is of very low safety significance because the finding did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) Function. It is also similar to examples of green findings in Appendix B of section 4.4 in IMC 0609 in that the EAL classification process would not declare any Alert or Notification of an UE that should be declared. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate problems such that the resolution addresses issues and extent of conditions, as necessary (P.1.c per IMC 0305)
Inspection Report# : 2008003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : May 28, 2009

Calvert Cliffs 1
2Q/2009 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Comply with Technical Specification Requirements While Starting Reactor Coolant Pumps
The inspectors identified an NCV of Technical Specifications (TS) 3.4.5, "RCS Loops – Mode 3," because Constellation did not comply with the required starting conditions for reactor coolant pumps (RCPs) during several plant startups on Unit 1. The inspectors identified a discrepancy between the RCP starting requirements described in the operating instructions (OI) and the RCP starting requirements listed in the TS for loop operability. Specifically, the OI did not provide operators with adequate procedural guidance to meet the Mode 3, 4, and 5 TS RCP starting requirements prior to starting RCPs. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included revising OI-1A, "Reactor Coolant System and Pump Operations," to ensure that the TS starting conditions are met prior to starting any RCPs.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, starting a RCP while not meeting the starting requirements could cause a pressure transient and lift a pressurizer PORV. The inspectors determined that the finding is of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of human performance because Constellation did not provide complete, accurate, and up-to-date procedures that were adequate to assure nuclear safety. Specifically, OI-1A included requirements that were contrary to the TS and led to the operators' failure to comply with the TS when starting RCPs (H.2.c per IMC 0305).

Inspection Report# : 2009002 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control associated with the Safety-Related Auxiliary Feedwater Pump Room Emergency Ventilation System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for Units 1 and 2 because Constellation did not establish an adequate test program to assure that the auxiliary feedwater (AFW) pump room emergency ventilation system would perform satisfactorily in service. Specifically, the performance evaluations used to determine the equipment performance of the emergency ventilation system did not incorporate the requirements and acceptance limits contained in the Updated Final Safety Analysis Report (UFSAR). This resulted in Constellation not recognizing that the AFW pump room emergency ventilation system did not meet the design requirements stated in the UFSAR. Constellation entered this issue into their corrective action program (CAP) for resolution as CR-2008-002833. The immediate corrective action included performing an operability determination to verify the operability of the Unit 1 and 2 turbine driven auxiliary feedwater (TDAFW) pumps. The planned corrective action included the installation of larger ventilation fans to obtain the required flow rate and to create a preventive maintenance task to measure the airflow for each emergency ventilation fan.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of the AFW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Additionally, the finding is similar to a "not minor if" example in Appendix E of IMC 0612, example 3.i, in that the facility was not consistent with the UFSAR and required that an analysis be re-performed to ensure that accident analysis requirements were met. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specifications (TS) allowed outage time, and did not screen as potentially risk significant due to external events. There is no cross-cutting aspect identified for this finding because the inspectors determined that the performance deficiency is the result of a latent issue and Constellation did not have a reasonable opportunity to identify the problem.
Inspection Report# : 2009003 *(pdf)*

Significance: G Mar 31, 2009
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Follow MSIV Actuator System Procedure
A self-revealing NCV of TS 5.4.1.a, "Procedures," was identified because Constellation did not follow procedures for refilling the No. 11 main steam isolation valve (MSIV) actuator accumulator with nitrogen. On February 6, 2009, while lining up to refill the No. 11 MSIV actuator accumulator, operators removed a blank flange which caused nitrogen gas to be released. This resulted in the No. 11 MSIV being inoperable. Immediate corrective actions included reinstallation of the blank flange, refilling the nitrogen accumulator to the required pressure, and conducting a prompt investigation. Constellation entered this issue into their CAP for further evaluation.

The inspectors determined that this finding is more than minor because it is associated with the human 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 (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate human error prevention techniques, such as holding an adequate pre-job brief and performing proper self and peer checking (H.4.a)

Inspection Report# : 2009002 *(pdf)*

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Auxiliary Feedwater Pump Room Temperature.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not provide design control measures for verifying the adequacy of a design calculation used to determine the maximum initial room temperature for the auxiliary feedwater (AFW) pump room. Specifically, Constellation used non-conservative inputs and assumptions in the design calculation that resulted in Constellation not recognizing that the design basis accident (DBA) temperature limit could have been exceeded. The AFW pump room emergency ventilation system must be established prior to exceeding a specified maximum initial room temperature to ensure that the AFW pump room temperature would not exceed the design limit of 130°F. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included establishing compensatory requirements for initiating emergency ventilation and conducting a re-analysis of the design calculation. The planned corrective action includes a modification to install a new automatic starting emergency ventilation system.

This finding is more than minor because it is similar to example 3.j. in Appendix E of IMC 0612 in that the non-conservative inputs and assumptions resulted in a condition where it created reasonable doubt on the operability of the

turbine-driven AFW (TDAFW) pumps . The finding is associated with the design control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance (Green) because the finding is a design and qualification deficiency confirmed not to result in the loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." There is no crosscutting aspect associated with this finding.

Inspection Report# : 2008005 *(pdf)*

Significance: G Dec 30, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Untimely Corrective Actions Associated with 480 Volt Power Supply Disconnects.
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because Constellation did not take timely corrective actions following the identification of degraded 480 volt power supply handswitch disconnects. This led to the failure of the Unit 1 No. 13 component cooling (CC) pump to start during performance of a surveillance test. The inspectors noted that Constellation had previously identified handswitch disconnects failures in 2006 and 2007. Immediate corrective action included replacing the handswitch disconnect for the 13 CC pump, conducting an extent of condition review, and entering this condition into their CAP.

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 to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the finding does not represent the loss of system safety function, does not represent actual loss of safety function of a single train for greater than its technical specification allowed outage time, and does not screen as potentially risk significant due to external events. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective actions to address safety issues associated with handswitch disconnects in a timely manner commensurate with their safety significance and complexity (P.1.d per IMC 0305).

Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct a degraded 12 CCHX SW outlet valve positioner in a timely manner.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not promptly identify and correct a condition adverse to quality (CAQ) related to the Unit 1 No. 12 component cooling (CC) heat exchanger (HX) saltwater (SW) outlet control valve (1-CV-5208). Specifically, Constellation did not promptly identify and correct a degraded condition associated with the valve's positioner when 1-CV-5208 did not respond as expected during SW flow verifications on May 13, 2008. Consequently, on May 21, 2008, operators declared the valve inoperable because the valve went from full shut to full open with only 25 percent indicated on the controller. The valve responded erratically because the spindle for the valve's positioner corroded and would not rotate to control the position of the valve. The corrosion mechanism was due to SW leaking from the valve packing to the actuator housing and onto the positioner. Constellation entered this issue into their corrective action program (CAP) for resolution as IRE-031-916. The immediate corrective actions following the May 21, 2008 event included the removal, inspection, and refurbishment of the positioner. The planned corrective action includes a modification to prevent SW from leaking outside the actuator housing and to perform preventive maintenance activities to detect degradation of the SW control valve positioners.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems (i.e. component heat removal) that respond to initiating events to prevent undesirable consequences. The

inspectors evaluated the significance of this finding using Phase 2 and 3 analyses and determined that the finding is of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not thoroughly evaluate SW flow control valve issues.
Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 29, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Maintain Adequate Procedures for 4 kV Circuit Breaker Maintenance
A self-revealing, NCV of Technical Specification (TS) 5.4.1.a, "Procedures," was identified because Constellation did not adequately establish and maintain electrical maintenance procedures for 4 kV circuit breakers such that the procedures incorporated torque values and verification steps to ensure the adjustment setscrew for the trip armature was properly tightened. During a surveillance test, on June 21, 2008, the adjustment setscrew backed out which prevented the 13 SRW pump breaker from opening. Constellation entered this issue into their CAP for resolution as IRE-032-517. The immediate corrective actions following the event included the replacement of the locking setscrew and trip coil. The planned corrective actions included the revision of maintenance orders and procedures to ensure that technicians perform peer verifications and check the tightness of the adjustment setscrew following maintenance activities.

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. The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single Train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not implement and institutionalize operating experience (OE), including internal and external OE to change station processes, procedures, and training programs when similar issues of internal and external events occurred on 4 kV circuit breakers that involved inadequate maintenance procedures.
Inspection Report# : 2008004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: W Jan 14, 2009
Identified By: NRC
Item Type: VIO Violation
Failure to Maintain Emergency Plans
Constellation identified a violation associated with the failure to meet emergency preparedness planning standard 10 CFR 50.47(b)(4). For the period of August 31, 2005, until April 10, 2008, the emergency action level (EAL) table's fission product barrier matrix contained an inaccurate threshold associated with identifying the potential loss of the containment barrier. The error was not identified by Constellation prior to implementation of the revised EAL table. Constellation evaluated this condition and took prompt actions to correct the inaccurate EAL.

The finding was more than minor because it was associated with the procedure quality (EAL changes) attribute of the Emergency Preparedness cornerstone and affected the associated cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding is associated with risk significant planning standard 10 CFR 50.47(b)(4) and 10 CFR 50 Appendix E, IV.B, "Assessment Actions." The NRC determined that the finding is preliminarily White, a finding with

low to moderate safety significance, that may require additional NRC inspection. Using Emergency Preparedness Significance Determination Process, Inspection Manual Chapter (IMC) 0609, Appendix B, Sheet 1, “Failure to Comply,” the finding was determined to be a risk significant planning standard (RSPS) problem and an RSPS degraded function (White). Additionally, IMC 0609, Appendix B contains an example of Loss of RSPS Function for 10 CFR 50.47 (b)(4); more than one Alert, or any Site Area Emergency would not be declared that should be declared, resulting in a White finding. There is no crosscutting aspect associated with this finding since it is not reflective of current licensee performance.

Inspection Report# : 2008502 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 31, 2009

Calvert Cliffs 1
3Q/2009 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Comply with Technical Specification Requirements While Starting Reactor Coolant Pumps
The inspectors identified an NCV of Technical Specifications (TS) 3.4.5, “RCS Loops – Mode 3,” because Constellation did not comply with the required starting conditions for reactor coolant pumps (RCPs) during several plant startups on Unit 1. The inspectors identified a discrepancy between the RCP starting requirements described in the operating instructions (OI) and the RCP starting requirements listed in the TS for loop operability. Specifically, the OI did not provide operators with adequate procedural guidance to meet the Mode 3, 4, and 5 TS RCP starting requirements prior to starting RCPs. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included revising OI-1A, “Reactor Coolant System and Pump Operations,” to ensure that the TS starting conditions are met prior to starting any RCPs.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, starting a RCP while not meeting the starting requirements could cause a pressure transient and lift a pressurizer PORV. The inspectors determined that the finding is of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of human performance because Constellation did not provide complete, accurate, and up-to-date procedures that were adequate to assure nuclear safety. Specifically, OI-1A included requirements that were contrary to the TS and led to the operators’ failure to comply with the TS when starting RCPs (H.2.c per IMC 0305).

Inspection Report# : 2009002 *(pdf)*

Mitigating Systems

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test control of Safety Related Batteries
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in that Constellation did not assure that required testing was performed in accordance with written test procedures and that test results were documented and evaluated to verify that test requirements were satisfied. Specifically, there were instances where Constellation did not correctly calculate batery capacity, record battery voltages, and properly load the battery during the 11 and 21 station battery discharge tests. In response, Constellation entered the issue into the corrective action program and determined that there was sufficient battery margine to assure operability of the station batteries.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single3 train, and did not screen as

potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery discharge test procedures did not ensure that capacities were correctly calculated, critical voltages were recorded, and battery test loading parameters were correct.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
U=Inadequate Design Control for 125 Vdc System
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 the design basis was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Constellation did not assure that design inputs were appropriate, calculations were performed corectly, and design changes were incorporated into the 125 Vdc system design documents. In response, Constellation entered the issue into the correctve action program and determined that the station batteries were operable based upon battery age and capacity, and an assessment of the specific deficiencies.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of the 125 Vdc system operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complege, accurate, and up-to-date design documentation was available and adequate to assure nuclear safety. Specifically, Constellation did not assure that design inputs were appropriate, calculations were done correctly, and design changes were incorporated into the 125 Vdc design documents. (IMC 0305, Aspect H.2(c)).
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 4 kV Bus Undervoltage Protection
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 verify the adequacy of design with respect to establishing the basis for the degaded voltage relay setpoint. Specifically, the load flow calculation used a non-conservative input to justify the 4160 Vac degraded voltage setpoint; and testing that was performed to analyze motor control center contactor voltage was non-conservative.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safet significance (Green) because it was a design deficiency that did not result in the loss of electrical distribution system 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for Potential Air Entrainment i the ECCS
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 ensure the adequacy of the emergency core cooling

system (ECCS) design under post-accident conditions. Specifically, Constellation had not performed adequate analyses or testing to evaluate the potential impact of air being entrained in the flow from the refueling water tank (RWT) during the transistion of the ECCS from the RWT to the containment sump. in response, Constellation entered this issue into their corrective action program and performed analyses to demonstrate that this condition did not renter associated equipment inoperable.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in a loss of ECCS 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control associated with the Safety-Related Auxiliary Feedwater Pump Room Emergency Ventilation System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for Units 1 and 2 because Constellation did not establish an adequate test program to assure that the auxiliary feedwater (AFW) pump room emergency ventilation system would perform satisfactorily in service. Specifically, the performance evaluations used to determine the equipment performance of the emergency ventilation system did not incorporate the requirements and acceptance limits contained in the Updated Final Safety Analysis Report (UFSAR). This resulted in Constellation not recognizing that the AFW pump room emergency ventilation system did not meet the design requirements stated in the UFSAR. Constellation entered this issue into their corrective action program (CAP) for resolution as CR-2008-002833. The immediate corrective action included performing an operability determination to verify the operability of the Unit 1 and 2 turbine driven auxiliary feedwater (TDAFW) pumps. The planned corrective action included the installation of larger ventilation fans to obtain the required flow rate and to create a preventive maintenance task to measure the airflow for each emergency ventilation fan.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of the AFW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Additionally, the finding is similar to a "not minor if" example in Appendix E of IMC 0612, example 3.i, in that the facility was not consistent with the UFSAR and required that an analysis be re-performed to ensure that accident analysis requirements were met. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specifications (TS) allowed outage time, and did not screen as potentially risk significant due to external events. There is no cross-cutting aspect identified for this finding because the inspectors determined that the performance deficiency is the result of a latent issue and Constellation did not have a reasonable opportunity to identify the problem.
Inspection Report# : 2009003 *(pdf)*

Significance: G Mar 31, 2009
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Follow MSIV Actuator System Procedure
A self-revealing NCV of TS 5.4.1.a, "Procedures," was identified because Constellation did not follow procedures for refilling the No. 11 main steam isolation valve (MSIV) actuator accumulator with nitrogen. On February 6, 2009, while lining up to refill the No. 11 MSIV actuator accumulator, operators removed a blank flange which caused nitrogen gas to be released. This resulted in the No. 11 MSIV being inoperable. Immediate corrective actions included reinstallation of the blank flange, refilling the nitrogen accumulator to the required pressure, and conducting a prompt investigation. Constellation entered this issue into their CAP for further evaluation.

The inspectors determined that this finding is more than minor because it is associated with the human 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 (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate human error prevention techniques, such as holding an adequate pre-job brief and performing proper self and peer checking (H.4.a)

Inspection Report# : 2009002 *(pdf)*

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Auxiliary Feedwater Pump Room Temperature.
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not provide design control measures for verifying the adequacy of a design calculation used to determine the maximum initial room temperature for the auxiliary feedwater (AFW) pump room. Specifically, Constellation used non-conservative inputs and assumptions in the design calculation that resulted in Constellation not recognizing that the design basis accident (DBA) temperature limit could have been exceeded. The AFW pump room emergency ventilation system must be established prior to exceeding a specified maximum initial room temperature to ensure that the AFW pump room temperature would not exceed the design limit of 130°F. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included establishing compensatory requirements for initiating emergency ventilation and conducting a re-analysis of the design calculation. The planned corrective action includes a modification to install a new automatic starting emergency ventilation system.

This finding is more than minor because it is similar to example 3.j. in Appendix E of IMC 0612 in that the non-conservative inputs and assumptions resulted in a condition where it created reasonable doubt on the operability of the turbine-driven AFW (TDAFW) pumps . The finding is associated with the design control attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding is of very low safety significance (Green) because the finding is a design and qualification deficiency confirmed not to result in the loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." There is no crosscutting aspect associated with this finding.

Inspection Report# : 2008005 *(pdf)*

Significance: G Dec 30, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Untimely Corrective Actions Associated with 480 Volt Power Supply Disconnects.
A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because Constellation did not take timely corrective actions following the identification of degraded 480 volt power supply handswitch disconnects. This led to the failure of the Unit 1 No. 13 component cooling (CC) pump to start during performance of a surveillance test. The inspectors noted that Constellation had previously identified handswitch disconnects failures in 2006 and 2007. Immediate corrective action included replacing the handswitch disconnect for the 13 CC pump, conducting an extent of condition review, and entering this condition into their CAP.

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 to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the finding does not represent the loss of system safety function, does not represent actual loss of safety function of a single train for greater than its technical specification allowed

outage time, and does not screen as potentially risk significant due to external events. The finding has a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective actions to address safety issues associated with handswitch disconnects in a timely manner commensurate with their safety significance and complexity (P.1.d per IMC 0305).

Inspection Report# : 2008005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: W Jan 14, 2009
Identified By: NRC
Item Type: VIO Violation
Failure to Maintain Emergency Plans
Constellation identified a violation associated with the failure to meet emergency preparedness planning standard 10 CFR 50.47(b)(4). For the period of August 31, 2005, until April 10, 2008, the emergency action level (EAL) table's fission product barrier matrix contained an inaccurate threshold associated with identifying the potential loss of the containment barrier. The error was not identified by Constellation prior to implementation of the revised EAL table. Constellation evaluated this condition and took prompt actions to correct the inaccurate EAL.

The finding was more than minor because it was associated with the procedure quality (EAL changes) attribute of the Emergency Preparedness cornerstone and affected the associated cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding is associated with risk significant planning standard 10 CFR 50.47(b)(4) and 10 CFR 50 Appendix E, IV.B, "Assessment Actions." The NRC determined that the finding is preliminarily White, a finding with low to moderate safety significance, that may require additional NRC inspection. Using Emergency Preparedness Significance Determination Process, Inspection Manual Chapter (IMC) 0609, Appendix B, Sheet 1, "Failure to Comply," the finding was determined to be a risk significant planning standard (RSPS) problem and an RSPS degraded function (White). Additionally, IMC 0609, Appendix B contains an example of Loss of RSPS Function for 10 CFR 50.47 (b)(4); more than one Alert, or any Site Area Emergency would not be declared that should be declared, resulting in a White finding. There is no crosscutting aspect associated with this finding since it is not reflective of current licensee performance.

Inspection Report# : 2008502 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings

pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 10, 2009

Calvert Cliffs 1
4Q/2009 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Comply with Technical Specification Requirements While Starting Reactor Coolant Pumps
The inspectors identified an NCV of Technical Specifications (TS) 3.4.5, "RCS Loops – Mode 3," because Constellation did not comply with the required starting conditions for reactor coolant pumps (RCPs) during several plant startups on Unit 1. The inspectors identified a discrepancy between the RCP starting requirements described in the operating instructions (OI) and the RCP starting requirements listed in the TS for loop operability. Specifically, the OI did not provide operators with adequate procedural guidance to meet the Mode 3, 4, and 5 TS RCP starting requirements prior to starting RCPs. Constellation entered this issue into their corrective action program (CAP) for resolution. The immediate corrective actions included revising OI-1A, "Reactor Coolant System and Pump Operations," to ensure that the TS starting conditions are met prior to starting any RCPs.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, starting a RCP while not meeting the starting requirements could cause a pressure transient and lift a pressurizer PORV. The inspectors determined that the finding is of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of human performance because Constellation did not provide complete, accurate, and up-to-date procedures that were adequate to assure nuclear safety. Specifically, OI-1A included requirements that were contrary to the TS and led to the operators' failure to comply with the TS when starting RCPs (H.2.c per IMC 0305).

Inspection Report# : 2009002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Flooding of a Saltwater Pump Pit
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not correctly translate the internal flooding design basis review for the saltwater (SW) pump pit compartments into specifications, procedures and instructions. Specifically, Constellation did not translate design basis flooding considerations and provisions as described in their internal plant flooding design evaluation into procedures and instructions to assure that the SW pumps would not be submerged during normal operating conditions. As a result, the No. 21 SW pump pit flooded on December 10, 2008. Constellation entered this issue into their corrective action program (CAP) for resolution as condition reports (CR)-2009-006077, CR-2009-009030 and CR-2010-00167. The immediate corrective action included initiating a CR to document some of the design considerations and provisions needed to prevent the SW pump pit compartments from flooding. The planned corrective actions included developing a preventive maintenance instruction to perform periodic maintenance on the floor drains located in the pump pit compartments and to perform an engineering evaluation to document all of the design provisions to demonstrate the flooding protection of the SW pumps.

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 to ensure the availability and reliability of the SW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Constellation did not maintain adequate design control to prevent a dry SW pump pit from flooding during normal operating conditions, which affected the No. 21 SW pump availability and reliability. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk significant due to external events. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the internal flooding design basis review occurred in May of 1991. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control of Safety Related Batteries
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in that Constellation did not assure that required testing was performed in accordance with written test procedures and that test results were documented and evaluated to verify that test requirements were satisfied. Specifically, there were instances where Constellation did not correctly calculate batery capacity, record battery voltages, and properly load the battery during the 11 and 21 station battery discharge tests. In response, Constellation entered the issue into the corrective action program and determined that there was sufficient battery margine to assure operability of the station batteries.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery discharge test procedures did not ensure that capacities were correctly calculated, critical voltages were recorded, and battery test loading parameters were correct.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 125 Vdc System
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 the design basis was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Constellation did not assure that design inputs were appropriate, calculations were performed corectly, and design changes were incorporated into the 125 Vdc system design documents. In response, Constellation entered the issue into the correctve action program and determined that the station batteries were operable based upon battery age and capacity, and an assessment of the specific deficiencies.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of the

125 Vdc system operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complege, accurate, and up-to-date design documentation was available and adequate to assure nuclear safety. Specifically, Constellation did not assure that design inputs were appropriate, calculations were done correctly, and design changes were incorporated into the 125 Vdc design documents. (IMC 0305, Aspect H.2(c)).
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 4 kV Bus Undervoltage Protection
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 verify the adequacy of design with respect to establishing the basis for the degaded voltage relay setpoint. Specifically, the load flow calculation used a non-conservative input to justify the 4160 Vac degraded voltage setpoint; and testing that was performed to analyze motor control center contactor voltage was non-conservative.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safet significance (Green) because it was a design deficiency that did not result in the loss of electrical distribution system 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for Potential Air Entrainment in the ECCS
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 ensure the adequacy of the emergency core cooling system (ECCS) design under post-accident conditions. Specifically, Constellation had not performed adequate analyses or testing to evaluate the potential impact of air being entrained in the flow from the refueling water tank (RWT) during the transistion of the ECCS from the RWT to the containment sump. in response, Constellation entered this issue into their corrective action program and performed analyses to demonstrate that this condition did not renter associated equipment inoperable.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in a loss of ECCS 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control associated with the Safety-Related Auxiliary Feedwater Pump Room Emergency Ventilation System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” for Units 1 and 2 because Constellation did not establish an adequate test program to assure that the auxiliary feedwater (AFW) pump room emergency ventilation system would perform satisfactorily in service. Specifically, the performance evaluations used to determine the equipment performance of the emergency ventilation system did not incorporate the

requirements and acceptance limits contained in the Updated Final Safety Analysis Report (UFSAR). This resulted in Constellation not recognizing that the AFW pump room emergency ventilation system did not meet the design requirements stated in the UFSAR. Constellation entered this issue into their corrective action program (CAP) for resolution as CR-2008-002833. The immediate corrective action included performing an operability determination to verify the operability of the Unit 1 and 2 turbine driven auxiliary feedwater (TDAFW) pumps. The planned corrective action included the installation of larger ventilation fans to obtain the required flow rate and to create a preventive maintenance task to measure the airflow for each emergency ventilation fan.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of the AFW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Additionally, the finding is similar to a "not minor if" example in Appendix E of IMC 0612, example 3.i, in that the facility was not consistent with the UFSAR and required that an analysis be re-performed to ensure that accident analysis requirements were met. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specifications (TS) allowed outage time, and did not screen as potentially risk significant due to external events. There is no cross-cutting aspect identified for this finding because the inspectors determined that the performance deficiency is the result of a latent issue and Constellation did not have a reasonable opportunity to identify the problem.
Inspection Report# : 2009003 *(pdf)*

Significance: G Mar 31, 2009
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Follow MSIV Actuator System Procedure
A self-revealing NCV of TS 5.4.1.a, "Procedures," was identified because Constellation did not follow procedures for refilling the No. 11 main steam isolation valve (MSIV) actuator accumulator with nitrogen. On February 6, 2009, while lining up to refill the No. 11 MSIV actuator accumulator, operators removed a blank flange which caused nitrogen gas to be released. This resulted in the No. 11 MSIV being inoperable. Immediate corrective actions included reinstallation of the blank flange, refilling the nitrogen accumulator to the required pressure, and conducting a prompt investigation. Constellation entered this issue into their CAP for further evaluation.

The inspectors determined that this finding is more than minor because it is associated with the human 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 (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a cross-cutting aspect in the area of human performance because Constellation did not effectively communicate human error prevention techniques, such as holding an adequate pre-job brief and performing proper self and peer checking (H.4.a)

Inspection Report# : 2009002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Provide for Adequate Dose Assessment with the Containment Outage Door Open
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its implementing procedures when the CCNPP Technical Specifications (TSs) were changed in 2001, allowing core alterations to be performed with the containment outage door (COD) open. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-004951. Constellation's corrective actions included revising site procedures to provide for the monitoring and measuring any post-fuel handling incident (FHI) release which may occur through the open containment equipment hatch and COD during refueling activities.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance attribute of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was a risk-significant planning standard (RSPS) problem; but it was not a RSPS functional failure of the Calvert Cliffs dose assessment process. This was not a degraded RSPS function because Calvert Cliffs maintained good procedures and practices for assessing unmonitored releases in the event of an on-site radiological event that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the inadequate review of the change occurred in 2001. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Compensatory Measures with the Wide Range Noble Gas Monitor Out of Service
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its dose assessment implementing procedures when CCNPP transitioned from the NUREG-0654 emergency action level (EAL) scheme to the NUMARC NESP-007 EAL scheme in 1993. The change in the EAL schemes resulted in additional site area emergency (SAE) and general emergency (GE) classification levels based on effluent monitor radiation levels. When these new EALs were added, Constellation did not revise their Emergency Response Plan Implementing Procedure (ERPIP)-821 to consider the radiation levels, which would exist at the SAE and GE thresholds. The specific concern involved the inability to take the compensatory measures when the wide range noble gas monitor (WRNGM) was out of service; manual radiation readings could not be taken near the WRNGM due to the radiation levels which could exist at the SAE and GE conditions. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-003720. Constellation's corrective actions included: the installation of a radiation meter at the 10-meter distance from the main stack that was remotely readable; revision of emergency Response Plan Implementing Procedure (ERPIP)-821 to account for the current Calvert Cliffs EAL thresholds; and the performance of a human performance investigation to provide for additional corrective actions to assure that plant changes are evaluated for impact and necessary changes to the emergency plan and its implementing procedures.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance and procedure quality attributes of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was an RSPS problem; but it was

not a RSPS functional failure of the CCNPP dose assessment process. This was not a degraded RSPS function because Calvert Cliffs EAL scheme has redundant EALs that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. This finding has a cross-cutting aspect in the area of identification and resolution of problems because the WRNGM has failed in the past (including as recently as December 2008 and May 2009), yet Constellation did not appropriately evaluate the proposed compensatory actions in a manner to assure the dose assessment function was not negatively affected. Specifically, the provisions of the ERPIP-821 sampling procedure had repeatedly been relied upon, but in fact were not able to satisfy the dose assessment functions required by the CCNPP Emergency Plan

Inspection Report# : 2009005 *(pdf)*

Significance: G Nov 20, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria
The inspectors identified a Green NCV of 10 CFR 50.54(q), for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE). Constellation's initial compensatory and corrective actions were inadequate because the compensatory action did not reflect the actual global bay conditions, thereby preventing operators from correctly implementing the EAL; and, the proposed corrective action, although not implemented, would have resulted in a decrease in effectiveness of the emergency plan. The immediate corrective actions included revising the compensatory measures to ensure that operators measure the bay water level at the appropriate location (i.e., in front of the trash racks). The planned corrective actions included installing a bay level monitoring system.

The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and, it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305).

Inspection Report# : 2009007 *(pdf)*

Significance: W Jan 14, 2009
Identified By: Licensee
Item Type: VIO Violation
Failure to Maintain Emergency Plans
Constellation identified a violation associated with the failure to meet emergency preparedness planning standard 10 CFR 50.47(b)(4). For the period of August 31, 2005, until April 10, 2008, the emergency action level (EAL) table's fission product barrier matrix contained an inaccurate threshold associated with identifying the potential loss of the containment barrier. The error was not identified by Constellation prior to implementation of the revised EAL table. Constellation evaluated this condition and took prompt actions to correct the inaccurate EAL.

The finding was more than minor because it was associated with the procedure quality (EAL changes) attribute of the Emergency Preparedness cornerstone and affected the associated cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding is associated with risk significant planning standard 10 CFR 50.47(b)(4) and 10 CFR 50 Appendix E, IV.B, "Assessment Actions." The NRC determined that the finding is preliminarily White, a finding with

low to moderate safety significance, that may require additional NRC inspection. Using Emergency Preparedness Significance Determination Process, Inspection Manual Chapter (IMC) 0609, Appendix B, Sheet 1, "Failure to Comply," the finding was determined to be a risk significant planning standard (RSPS) problem and an RSPS degraded function (White). Additionally, IMC 0609, Appendix B contains an example of Loss of RSPS Function for 10 CFR 50.47 (b)(4); more than one Alert, or any Site Area Emergency would not be declared that should be declared, resulting in a White finding. There is no crosscutting aspect associated with this finding since it is not reflective of current licensee performance.

During the supplemental inspection, the inspectors determined that Constellation had performed a comprehensive evaluation of the incorrect EAL matrix and staff performance issues. However, the NRC inspectors identified one example where minor decreases in effectiveness (DIEs) had been introduced into the current EALs. Specifically, a reduction in several safe shutdown locations was not identified as a DIE. These DIEs were not risk-significant, in that the EAL set met the intent of the NEI 99-01 scheme; however, Constellation inappropriately eliminated events that would have been classified under the previous scheme, without prior NRC approval.

The licensee's evaluation determined the root cause of the issue associated with the white finding was that their organization did not recognize nor understand the true scope of the EAL change project. This resulted in the absence of a thorough, structured review and assessment process that would assure the NUMARC/NESP-007 based EALs were properly converted to the NEI 99-01, Revision 4, based EAL scheme without causing a decrease in effectiveness of the Calvert Cliffs Emergency Plan. Constellation implemented appropriate corrective actions that addressed the root cause and contributing causes. They also conducted an extent of condition review for other EALs and associated tables to ensure they were consistent with regulatory and industry guidance.

Given the licensee's acceptable performance in addressing the EAL deficiencies, the white finding associated with this issue will only be considered in assessing plant performance through the fourth quarter of 2009, in accordance with the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program." Further implementation of the licensee's corrective actions may be reviewed during future inspections.

Inspection Report# : 2008502 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: SL-IV Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Information Technology Analyst Failure to Disclose Prior Criminal History to Gain Unescorted Access Authorization

This severity level IV NCV identified on July 8, 2009, stated that contrary to 10 CFR 50.34(c) and the CCNPP Physical Security Plan, a former ITA deliberately failed to disclose elements of his criminal history when applying for UAA at CCNPP. This violation was documented in a July 8, 2009, NRC letter to CCNPP. CCNPP determined that the event occurred because the provisions within NEI 03-01, "Nuclear Power Plant Access Authorization Program," used to determine trustworthiness and reliability were not properly applied. This was evident in that the security access procedure, used by the reviewing official, did not identify the expectation to consider the psychologist report and comments, which lead directly to granting the ITA UAA prior to the discovery of potentially disqualifying information. To correct this performance deficiency, several corrective actions were implemented including: communicating the requirements in NEI 03-01 to access investigators that require a review of the psychologist report prior to determination of authorizing UAA, verifying all PADS reports were reviewed to ensure validity and accuracy of the information, issuing Operating Experience (OE) for this event, updating the security procedures and the security access guideline to accurately reflect the NEI 03-01 guidance, and performing a self-assessment of the Security Access Standard to identify vague or interpretive guidance in other processes. Additionally, the CAP opened an action to track and complete an effectiveness review of the security background investigator's training material and reviewing official process to evaluate trustworthiness and reliability based on the accumulation of all information, including the psychologist report prior to authorizing UAA.

The inspectors reviewed the corrective actions outlined in the August 21, 2009, Apparent Cause Evaluation, and CCNPP's review of previous industry OE dated October 2, 2009. The inspectors concluded that the root cause analysis was thorough and complete. Additionally, corrective actions taken were appropriate and timely. This violation is closed.
Inspection Report# : 2009005 *(pdf)*

Significance: N/A Nov 20, 2009
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Specifically, Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Constellation appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, Constellation occasionally used generic operability statements as the basis for operability decisions which resulted in inadequately documented conclusions. Corrective actions taken to address the problems identified in Constellation's corrective action process were typically implemented in a timely manner. However, for one issue reviewed by the inspectors, inadequate implementation of corrective actions resulted in one NRC-identified finding. In another case, corrective action for risk assessment tool deficiencies were not fully effective.

The inspectors also concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to CCNPP operations. In addition, based on those items selected for review by the inspectors, Constellation's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2009007 *(pdf)*

Last modified : March 01, 2010

Calvert Cliffs 1
1Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain Surveillance Procedures Associated with Fire Barrier and Penetration Seal Inspections
The inspectors identified a non-cited violation (NCV) of Calvert Cliffs Renewed Facility Operating License Numbers DPR-53 and DPR-54, License Condition 2.E, because Constellation did not adequately implement and maintain surveillance procedures associated with fire barrier and penetration seal inspections. As a result, Constellation did not identify degraded conditions associated with one fire barrier and three penetration seals. Immediate actions taken included entering the appropriate Technical Requirement Manual (TRM) action statement, establishing an hourly fire tour until temporary repairs were completed, and entering each issue into their corrective action program (CAP) for resolution.

The finding is more than minor because it was associated with the external factors attribute (i.e. fire) of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability and capability of systems that respond to initiation events to prevent undesirable consequences. Specifically, the degraded conditions had to be repaired or evaluated to ensure that the barriers/penetrations would meet their design function. In addition, if left uncorrected the finding could result in a more significant safety concern in that that the condition could continue to degrade such that the barriers/penetrations could no longer perform their specified function and/or result in the inability of Constellation to recognize additional degraded fire barriers/penetrations. The inspectors determined that the finding is of very low safety significance because there was a non-degraded automatic full area water based fire suppression system in the exposing fire area. This finding has a crosscutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures for fire penetration seal inspections (H.4.b of IMC 0310).

Inspection Report# : 2010002 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Flooding of a Saltwater Pump Pit
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” because Constellation did not correctly translate the internal flooding design basis review for the saltwater (SW) pump pit compartments into specifications, procedures and instructions. Specifically, Constellation did not translate design basis flooding considerations and provisions as described in their internal plant flooding design evaluation into procedures and instructions to assure that the SW pumps would not be submerged during normal operating conditions. As a result, the No. 21 SW pump pit flooded on December 10, 2008. Constellation entered this issue into their corrective action program (CAP) for resolution as condition reports (CR)-2009-006077, CR-2009-009030 and CR-2010-00167. The immediate corrective action included initiating a CR to document some of the design considerations and provisions needed to prevent the SW pump pit compartments from flooding. The planned corrective actions included developing a preventive maintenance instruction to perform periodic maintenance on the floor drains located

in the pump pit compartments and to perform an engineering evaluation to document all of the design provisions to demonstrate the flooding protection of the SW pumps.

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 to ensure the availability and reliability of the SW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Constellation did not maintain adequate design control to prevent a dry SW pump pit from flooding during normal operating conditions, which affected the No. 21 SW pump availability and reliability. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk significant due to external events. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the internal flooding design basis review occurred in May of 1991. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control of Safety Related Batteries
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in that Constellation did not assure that required testing was performed in accordance with written test procedures and that test results were documented and evaluated to verify that test requirements were satisfied. Specifically, there were instances where Constellation did not correctly calculate batery capacity, record battery voltages, and properly load the battery during the 11 and 21 station battery discharge tests. In response, Constellation entered the issue into the corrective action program and determined that there was sufficient battery margine to assure operability of the station batteries.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery discharge test procedures did not ensure that capacities were correctly calculated, critical voltages were recorded, and battery test loading parameters were correct.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 125 Vdc System
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 the design basis was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Constellation did not assure that design inputs were appropriate, calculations were performed corectly, and design changes were incorporated into the 125 Vdc system design documents. In response, Constellation entered the issue into the correctve action program and determined that the station batteries were operable based upon battery age and capacity, and an assessment of the specific deficiencies.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems

cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of the 125 Vdc system operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complege, accurate, and up-to-date design documentation was available and adequate to assure nuclear safety. Specifically, Constellation did not assure that design inputs were appropriate, calculations were done correctly, and design changes were incorporated into the 125 Vdc design documents. (IMC 0305, Aspect H.2(c)).
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 4 kV Bus Undervoltage Protection
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 verify the adequacy of design with respect to establishing the basis for the degaded voltage relay setpoint. Specifically, the load flow calculation used a non-conservative input to justify the 4160 Vac degraded voltage setpoint; and testing that was performed to analyze motor control center contactor voltage was non-conservative.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safet significance (Green) because it was a design deficiency that did not result in the loss of electrical distribution system 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for Potential Air Entrainment in the ECCS
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 ensure the adequacy of the emergency core cooling system (ECCS) design under post-accident conditions. Specifically, Constellation had not performed adequate analyses or testing to evaluate the potential impact of air being entrained in the flow from the refueling water tank (RWT) during the transistion of the ECCS from the RWT to the containment sump. in response, Constellation entered this issue into their corrective action program and performed analyses to demonstrate that this condition did not renter associated equipment inoperable.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in a loss of ECCS 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control associated with the Safety-Related Auxiliary Feedwater Pump Room Emergency Ventilation System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” for Units 1 and 2

because Constellation did not establish an adequate test program to assure that the auxiliary feedwater (AFW) pump room emergency ventilation system would perform satisfactorily in service. Specifically, the performance evaluations used to determine the equipment performance of the emergency ventilation system did not incorporate the requirements and acceptance limits contained in the Updated Final Safety Analysis Report (UFSAR). This resulted in Constellation not recognizing that the AFW pump room emergency ventilation system did not meet the design requirements stated in the UFSAR. Constellation entered this issue into their corrective action program (CAP) for resolution as CR-2008-002833. The immediate corrective action included performing an operability determination to verify the operability of the Unit 1 and 2 turbine driven auxiliary feedwater (TDAFW) pumps. The planned corrective action included the installation of larger ventilation fans to obtain the required flow rate and to create a preventive maintenance task to measure the airflow for each emergency ventilation fan.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of the AFW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Additionally, the finding is similar to a "not minor if" example in Appendix E of IMC 0612, example 3.i, in that the facility was not consistent with the UFSAR and required that an analysis be re-performed to ensure that accident analysis requirements were met. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specifications (TS) allowed outage time, and did not screen as potentially risk significant due to external events. There is no cross-cutting aspect identified for this finding because the inspectors determined that the performance deficiency is the result of a latent issue and Constellation did not have a reasonable opportunity to identify the problem.
Inspection Report# : 2009003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Dose Assessment with the Containment Outage Door Open
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its implementing procedures when the CCNPP Technical Specifications (TSs) were changed in 2001, allowing core alterations to be performed with the containment outage door (COD) open. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-004951. Constellation's corrective actions included revising site procedures to provide for the monitoring and measuring any post-fuel handling incident (FHI) release which may occur through the open containment equipment hatch and COD during refueling activities.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance attribute of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was a risk-significant planning standard (RSPS) problem; but it was not a RSPS functional failure of the Calvert Cliffs dose assessment process. This was not a degraded RSPS function because Calvert Cliffs maintained good procedures and practices for assessing unmonitored releases in the event of an on-site radiological event that provided assurance that this performance deficiency

ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the inadequate review of the change occurred in 2001. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Compensatory Measures with the Wide Range Noble Gas Monitor Out of Service
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its dose assessment implementing procedures when CCNPP transitioned from the NUREG-0654 emergency action level (EAL) scheme to the NUMARC NESP-007 EAL scheme in 1993. The change in the EAL schemes resulted in additional site area emergency (SAE) and general emergency (GE) classification levels based on effluent monitor radiation levels. When these new EALs were added, Constellation did not revise their Emergency Response Plan Implementing Procedure (ERPIP)-821 to consider the radiation levels, which would exist at the SAE and GE thresholds. The specific concern involved the inability to take the compensatory measures when the wide range noble gas monitor (WRNGM) was out of service; manual radiation readings could not be taken near the WRNGM due to the radiation levels which could exist at the SAE and GE conditions. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-003720. Constellation's corrective actions included: the installation of a radiation meter at the 10-meter distance from the main stack that was remotely readable; revision of emergency Response Plan Implementing Procedure (ERPIP)-821 to account for the current Calvert Cliffs EAL thresholds; and the performance of a human performance investigation to provide for additional corrective actions to assure that plant changes are evaluated for impact and necessary changes to the emergency plan and its implementing procedures.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance and procedure quality attributes of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was an RSPS problem; but it was not a RSPS functional failure of the CCNPP dose assessment process. This was not a degraded RSPS function because Calvert Cliffs EAL scheme has redundant EALs that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. This finding has a cross-cutting aspect in the area of identification and resolution of problems because the WRNGM has failed in the past (including as recently as December 2008 and May 2009), yet Constellation did not appropriately evaluate the proposed compensatory actions in a manner to assure the dose assessment function was not negatively affected. Specifically, the provisions of the ERPIP-821 sampling procedure had repeatedly been relied upon, but in fact were not able to satisfy the dose assessment functions required by the CCNPP Emergency Plan.

This item was discussed in 2010-002 Report.

Inspection Report# : 2009005 *(pdf)*

Significance: G Nov 20, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria
The inspectors identified a Green NCV of 10 CFR 50.54(q), for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to

not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE). Constellation's initial compensatory and corrective actions were inadequate because the compensatory action did not reflect the actual global bay conditions, thereby preventing operators from correctly implementing the EAL; and, the proposed corrective action, although not implemented, would have resulted in a decrease in effectiveness of the emergency plan. The immediate corrective actions included revising the compensatory measures to ensure that operators measure the bay water level at the appropriate location (i.e., in front of the trash racks). The planned corrective actions included installing a bay level monitoring system.

The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and, it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305).

Inspection Report# : 2009007 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: SL-IV Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Information Technology Analyst Failure to Disclose Prior Criminal History to Gain Unescorted Access Authorization
This severity level IV NCV identified on July 8, 2009, stated that contrary to 10 CFR 50.34(c) and the CCNPP Physical Security Plan, a former ITA deliberately failed to disclose elements of his criminal history when applying for UAA at CCNPP. This violation was documented in a July 8, 2009, NRC letter to CCNPP. CCNPP determined that the event occurred because the provisions within NEI 03-01, "Nuclear Power Plant Access Authorization Program," used to determine trustworthiness and reliability were not properly applied. This was evident in that the security access procedure, used by the reviewing official, did not identify the expectation to consider the psychologist report and comments, which lead directly to granting the ITA UAA prior to the discovery of potentially disqualifying

information. To correct this performance deficiency, several corrective actions were implemented including: communicating the requirements in NEI 03-01 to access investigators that require a review of the psychologist report prior to determination of authorizing UAA, verifying all PADS reports were reviewed to ensure validity and accuracy of the information, issuing Operating Experience (OE) for this event, updating the security procedures and the security access guideline to accurately reflect the NEI 03-01 guidance, and performing a self-assessment of the Security Access Standard to identify vague or interpretive guidance in other processes. Additionally, the CAP opened an action to track and complete an effectiveness review of the security background investigator's training material and reviewing official process to evaluate trustworthiness and reliability based on the accumulation of all information, including the psychologist report prior to authorizing UAA.

The inspectors reviewed the corrective actions outlined in the August 21, 2009, Apparent Cause Evaluation, and CCNPP's review of previous industry OE dated October 2, 2009. The inspectors concluded that the root cause analysis was thorough and complete. Additionally, corrective actions taken were appropriate and timely. This violation is closed.
Inspection Report# : 2009005 *(pdf)*

Significance: N/A Nov 20, 2009
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Specifically, Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Constellation appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, Constellation occasionally used generic operability statements as the basis for operability decisions which resulted in inadequately documented conclusions. Corrective actions taken to address the problems identified in Constellation's corrective action process were typically implemented in a timely manner. However, for one issue reviewed by the inspectors, inadequate implementation of corrective actions resulted in one NRC-identified finding. In another case, corrective action for risk assessment tool deficiencies were not fully effective.

The inspectors also concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to CCNPP operations. In addition, based on those items selected for review by the inspectors, Constellation's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2009007 *(pdf)*

Last modified : May 26, 2010

Calvert Cliffs 1
2Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Reviews of the Turbine Control System and the Nuclear Steam Supply System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not perform adequate design reviews associated with modifications to the turbine control system and the nuclear steam supply system (NSSS). Specifically, Constellation did not adequately evaluate the potential adverse impacts of removal of the power load unbalance (PLU) turbine trip on the quality of safety related systems, structure, and components (SSCs) such as the main steam safety valves (MSSVs) and power operated relief valves (PORVs). In addition, during significant changes to plant design such as steam generator replacements and power uprates, Constellation did not conduct an adequate evaluation to determine if the turbine bypass valve (TBV)/atmospheric dump valve (ADV) design specification of opening within 3 seconds after receiving the quick open signal would still be sufficient to prevent lifting MSSVs. Immediate corrective actions included entering these issues into their corrective action program (CAP) and performing an immediate operability determination and a probabilistic risk analysis.

This finding is more than minor because it affected the Initiating Event cornerstone attribute of design control and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the removal of the PLU turbine trip and the modifications to the NSSS could challenge primary and secondary overpressure protection devices and result in a stuck open MSSV or PORV. The inspectors evaluated this finding using an SDP phase 2 analysis and determined that the issue is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not adequately make safety-significant decisions using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. (H.1.a of IMC 0310).

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
Did Not Establish Preventive Maintenance Program for Switchyard Panels

Green. A self-revealing finding of very low safety significance was identified because Constellation did not establish an appropriate preventive maintenance program for the 125 VDC switchyard distribution panels in accordance with MN-1, "Maintenance Program." The 125 VDC switchyard distribution system supplies power to the switchyard direct current (DC) loads for the operation of switchyard circuit breakers, emergency lights, and protective relays. Immediate corrective actions included entering this issue into the CAP and performing an inspection of all 125 VDC switchyard distribution panels. Long-term corrective actions planned include establishing an adequate preventative measure (PM) program for the 125 VDC switchyard distribution panels.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety function. In addition, if left uncorrected, the performance deficiency could lead to a more significant safety concern. Specifically, the failure to establish an adequate preventive maintenance program for the 125 VDC switchyard distribution panels could preclude the identification of equipment deficiencies, such as loose connections, that could result in a plant transient. The finding is of very low safety significance because it did

not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not use OE information, including vendor recommendations to support plant safety. Specifically, the Constellation did not implement and institutionalize OE through changes to station processes, procedures, equipment, and training associated with the switchyard preventive maintenance program (P.2.b of IMC 0305).

Inspection Report# : 2010003 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Translate Design Calculation Setpoint of Phase Overcurrent Relay on Feeder Breakers
The team identified a finding for failure to translate the design calculations of phase overcurrent relays on 13 kV feeder breakers into the actual relay settings. The overcurrent relays protect the unit service transformer against faults in the primary or secondary side windings. The design specified limit of 1200 amps was determined based on the breaker rating of the feeder breakers. Constellation determined the as-found relay setting for the feeder breakers was 1440 amps which exceeded the rating of the feeder breakers. The team determined that due to the as-found relay setting, certain phase overcurrent conditions could potentially cause the breakers to fail prior to the phase overcurrent relay sensing the degraded condition. This condition could affect the recovery of the safey buses from the electrical grid. Constellation entered this issue into the corrective action program (condition report 2010-002123).

This finding is more than minor because it affected the Initiating Events Cornerstone attribute of equipment performance for ensuring the availability and reliability of systems to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Also, this issue was similar to Example 3j of IMC 0612, Appendix E, "Examples of Minor Issues," because the condition resulted in reasonable doubt of the operability of the component, and additional analysis was necessary to verify operability. This finding was determined to be of very low safety significance because the design deficiency did not result in an actual loss of function based on Constellation's determination that the maximum load current possible would not challenge the feeder breaker ratings. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The finding did not have a cross-cuting aspect because the most significant contributor to the perfoormance deficiency was not reflective of current licensee performance.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Thoroughly Evaluate and Promptly Correct Degraded Conditions Associated with Auxiliary Building Roof Leakage
A self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix , Criterion XVI "Corrective Actions," was identified, because auxiliary building roof leakage into the Unit 1 and Unit 2 45 foot switchgear rooms was identified on several occasions from 2002 to 2009, but was not thoroughly evaluated and corrective actions to this condition adverse to quality were untimely and ineffective. This degraded condition led to the failure of the auxiliary building to provide protection to several safety related systems from external events, a ground on a reactor coolant pump (RCP) bus, and ultimately a Unit 1 reactor trip. Immediate corrective actions included: repair of degraded areas of the roof; walk downs of other buildings within the protected area that could be susceptible to damage to electrical equipment due to water intrusion; issuance of standing orders to incude guidance regarding priortizing work orders due to roof leakage; and identifying further actions to take during periods of snow or rain to ensure plant equipment is not affected. Constellation entered the issue into their corrective action program (Condition Report (CR) 2010-001351). Long-term corrective actions include implementation of improved plant processes for categorization, prioritization and management of roofing issues.

The findings is more than minor because it is associated with the protection against external factors attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The team

determined the finding had a very low safety significance because, although it caused the reactor trip, it did not contribute to the likelihood that mitigation equipment or functions will not be available. The cause of the finding is related to the crosscutting area of Problem Identification and Resolution, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the problems related to the water intrusion into the auxiliary building such that the resolutions addressed the causes and extent-of-condition. This includes properly classifying, prioritizing, and evaluating the condition adverse to quality.
Inspection Report# : 2010006 *(pdf)*

Mitigating Systems

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Degraded Conditions Associated with CO-8 Relays and Implement Timely and Effective Action to Correct the Condition Adverse to Quality.
The team identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not thoroughly evaluate and correct a degraded condition of a CO-8 relay disc sticking or binding issues which can adversely impact the function of the EDGs and the electrical distribution protection scheme. Specifically, following the February 18, 2010 event, Constellation did not identify and adequately evaluate the recent CO-8 relay failures due to sticking or binding of the induction discs in the safety related and non-safety related applications. Constellation entered this issue into the corrective action pprogram (CR 20100004673).

The finding is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone, and it adversely affected the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance safety function. The cause of the finding is related to the crosscutting area of Problem Identification and Resoluton, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the previous station operating experience of CO-8 relay induction disc sticking and binding issues such that resolutions addressed the causes and extent-of-condition.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failed to Establish Adequate Procedures for Letdown Restoration
A self-revealing NCV of Technical Specification (TS) 5.4.1.a, "Procedures" was identified for failure to establish adequate procedures for restoration of Chemical and Volume Control System (CVCS) letdown flow. On February 18, 2010, an electrical ground fault caused a Unit 1 reactor trip, loss of the 500 kV Red Bus, and CVCS letdown isolation as expected on the ensuring instrument bus 1Y10 electrical transient. Deficient operating instructions prevented timely restoration of letdown flow following the initial transient. Pressurizer level remained above the range specified in Emergency Operating Procedure (EOP)-1 for an extended period because of the operators' inability to restore letdown. This ultimately led to exceeding the TS high limit for pressurizer level. CVCS Operating Instruction OI-2A was subsequently revised, providing necessary guidance for re-opening the letdown system excess flow check valve to restore letdown flow. This event was entered into the licensee's correction action program (CR 2010-001378).

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of human performance resources aspect H.2(c), because Constellation did not ensure that procedures for restoring CVCS letdown were complete and accurate.
Inspection Report# : 2010006 *(pdf)*

Significance: G Mar 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain Surveillance Procedures Associated with Fire Barrier and Penetration Seal Inspections
The inspectors identified a non-cited violation (NCV) of Calvert Cliffs Renewed Facility Operating License Numbers DPR-53 and DPR-54, License Condition 2.E, because Constellation did not adequately implement and maintain surveillance procedures associated with fire barrier and penetration seal inspections. As a result, Constellation did not identify degraded conditions associated with one fire barrier and three penetration seals. Immediate actions taken included entering the appropriate Technical Requirement Manual (TRM) action statement, establishing an hourly fire tour until temporary repairs were completed, and entering each issue into their corrective action program (CAP) for resolution.

The finding is more than minor because it was associated with the external factors attribute (i.e. fire) of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability and capability of systems that respond to initiation events to prevent undesirable consequences. Specifically, the degraded conditions had to be repaired or evaluated to ensure that the barriers/penetrations would meet their design function. In addition, if left uncorrected the finding could result in a more significant safety concern in that that the condition could continue to degrade such that the barriers/penetrations could no longer perform their specified function and/or result in the inability of Constellation to recognize additional degraded fire barriers/penetrations. The inspectors determined that the finding is of very low safety significance because there was a non-degraded automatic full area water based fire suppression system in the exposing fire area. This finding has a crosscutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures for fire penetration seal inspections (H.4.b of IMC 0310).

Inspection Report# : 2010002 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Flooding of a Saltwater Pump Pit
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” because Constellation did not correctly translate the internal flooding design basis review for the saltwater (SW) pump pit compartments into specifications, procedures and instructions. Specifically, Constellation did not translate design basis flooding considerations and provisions as described in their internal plant flooding design evaluation into procedures and instructions to assure that the SW pumps would not be submerged during normal operating conditions. As a result, the No. 21 SW pump pit flooded on December 10, 2008. Constellation entered this issue into their corrective action program (CAP) for resolution as condition reports (CR)-2009-006077, CR-2009-009030 and CR-2010-00167. The immediate corrective action included initiating a CR to document some of the design considerations and provisions needed to prevent the SW pump pit compartments from flooding. The planned corrective actions included developing a preventive maintenance instruction to perform periodic maintenance on the floor drains located in the pump pit compartments and to perform an engineering evaluation to document all of the design provisions to demonstrate the flooding protection of the SW pumps.

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 to ensure the availability and reliability of the SW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Constellation did not maintain adequate design control to prevent a dry SW pump pit from flooding during normal operating conditions, which affected the No. 21 SW pump availability and reliability. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk significant due to external events. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the internal flooding design basis review occurred in May of 1991. Therefore, the inspectors concluded that this

did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Control of Safety Related Batteries
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in that Constellation did not assure that required testing was performed in accordance with written test procedures and that test results were documented and evaluated to verify that test requirements were satisfied. Specifically, there were instances where Constellation did not correctly calculate batery capacity, record battery voltages, and properly load the battery during the 11 and 21 station battery discharge tests. In response, Constellation entered the issue into the corrective action program and determined that there was sufficient battery margine to assure operability of the station batteries.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery discharge test procedures did not ensure that capacities were correctly calculated, critical voltages were recorded, and battery test loading parameters were correct.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for 125 Vdc System
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 the design basis was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Constellation did not assure that design inputs were appropriate, calculations were performed corectly, and design changes were incorporated into the 125 Vdc system design documents. In response, Constellation entered the issue into the correctve action program and determined that the station batteries were operable based upon battery age and capacity, and an assessment of the specific deficiencies.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of the 125 Vdc system operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component, because Constellation did not ensure that complege, accurate, and up-to-date design documentation was available and adequate to assure nuclear safety. Specifically, Constellation did not assure that design inputs were appropriate, calculations were done correctly, and design changes were incorporated into the 125 Vdc design documents. (IMC 0305, Aspect H.2(c)).
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Design Control for 4 kV Bus Undervoltage Protection
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 verify the adequacy of design with respect to establishing the basis for the degaded voltage relay setpoint. Specifically, the load flow calculation used a non-conservative input to justify the 4160 Vac degraded voltage setpoint; and testing that was performed to analyze motor control center contactor voltage was non-conservative.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safet significance (Green) because it was a design deficiency that did not result in the loss of electrical distribution system 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.
Inspection Report# : 2009006 *(pdf)*

Significance: G Aug 28, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control for Potential Air Entrainment in the ECCS
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 ensure the adequacy of the emergency core cooling system (ECCS) design under post-accident conditions. Specifically, Constellation had not performed adequate analyses or testing to evaluate the potential impact of air being entrained in the flow from the refueling water tank (RWT) during the transistion of the ECCS from the RWT to the containment sump. in response, Constellation entered this issue into their corrective action program and performed analyses to demonstrate that this condition did not renter associated equipment inoperable.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in a loss of ECCS 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.
Inspection Report# : 2009006 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Dose Assessment with the Containment Outage Door Open
The inspectors identified a Green NCV of 10 CFR 50.54(q), “Conditions of Licenses,” because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its implementing procedures when the CCNPP Technical Specifications (TSs) were changed in 2001, allowing core alterations to be performed with the containment outage door (COD) open. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-004951. Constellation’s corrective actions included revising site procedures to provide for the monitoring and

measuring any post-fuel handling incident (FHI) release which may occur through the open containment equipment hatch and COD during refueling activities.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance attribute of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was a risk-significant planning standard (RSPS) problem; but it was not a RSPS functional failure of the Calvert Cliffs dose assessment process. This was not a degraded RSPS function because Calvert Cliffs maintained good procedures and practices for assessing unmonitored releases in the event of an on-site radiological event that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the inadequate review of the change occurred in 2001. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Compensatory Measures with the Wide Range Noble Gas Monitor Out of Service
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its dose assessment implementing procedures when CCNPP transitioned from the NUREG-0654 emergency action level (EAL) scheme to the NUMARC NESP-007 EAL scheme in 1993. The change in the EAL schemes resulted in additional site area emergency (SAE) and general emergency (GE) classification levels based on effluent monitor radiation levels. When these new EALs were added, Constellation did not revise their Emergency Response Plan Implementing Procedure (ERPIP)-821 to consider the radiation levels, which would exist at the SAE and GE thresholds. The specific concern involved the inability to take the compensatory measures when the wide range noble gas monitor (WRNGM) was out of service; manual radiation readings could not be taken near the WRNGM due to the radiation levels which could exist at the SAE and GE conditions. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-003720. Constellation's corrective actions included: the installation of a radiation meter at the 10-meter distance from the main stack that was remotely readable; revision of emergency Response Plan Implementing Procedure (ERPIP)-821 to account for the current Calvert Cliffs EAL thresholds; and the performance of a human performance investigation to provide for additional corrective actions to assure that plant changes are evaluated for impact and necessary changes to the emergency plan and its implementing procedures.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance and procedure quality attributes of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was an RSPS problem; but it was not a RSPS functional failure of the CCNPP dose assessment process. This was not a degraded RSPS function because Calvert Cliffs EAL scheme has redundant EALs that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. This finding has a cross-cutting aspect in the area of identification and resolution of problems because the WRNGM has failed in the past (including as recently as December 2008 and May 2009), yet Constellation did not appropriately evaluate the proposed compensatory actions in a manner to assure the dose assessment function was not negatively affected. Specifically, the provisions of the ERPIP-821 sampling procedure had repeatedly been relied

upon, but in fact were not able to satisfy the dose assessment functions required by the CCNPP Emergency Plan.

This item was discussed in 2010-002 Report.

Inspection Report# : 2009005 *(pdf)*

Significance: G Nov 20, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria
The inspectors identified a Green NCV of 10 CFR 50.54(q), for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE). Constellation's initial compensatory and corrective actions were inadequate because the compensatory action did not reflect the actual global bay conditions, thereby preventing operators from correctly implementing the EAL; and, the proposed corrective action, although not implemented, would have resulted in a decrease in effectiveness of the emergency plan. The immediate corrective actions included revising the compensatory measures to ensure that operators measure the bay water level at the appropriate location (i.e., in front of the trash racks). The planned corrective actions included installing a bay level monitoring system.

The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and, it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305).

Inspection Report# : 2009007 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: SL-IV Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Information Technology Analyst Failure to Disclose Prior Criminal History to Gain Unescorted Access Authorization
This severity level IV NCV identified on July 8, 2009, stated that contrary to 10 CFR 50.34(c) and the CCNPP Physical Security Plan, a former ITA deliberately failed to disclose elements of his criminal history when applying for UAA at CCNPP. This violation was documented in a July 8, 2009, NRC letter to CCNPP. CCNPP determined that the event occurred because the provisions within NEI 03-01, "Nuclear Power Plant Access Authorization Program," used to determine trustworthiness and reliability were not properly applied. This was evident in that the security access procedure, used by the reviewing official, did not identify the expectation to consider the psychologist report and comments, which lead directly to granting the ITA UAA prior to the discovery of potentially disqualifying information. To correct this performance deficiency, several corrective actions were implemented including: communicating the requirements in NEI 03-01 to access investigators that require a review of the psychologist report prior to determination of authorizing UAA, verifying all PADS reports were reviewed to ensure validity and accuracy of the information, issuing Operating Experience (OE) for this event, updating the security procedures and the security access guideline to accurately reflect the NEI 03-01 guidance, and performing a self-assessment of the Security Access Standard to identify vague or interpretive guidance in other processes. Additionally, the CAP opened an action to track and complete an effectiveness review of the security background investigator's training material and reviewing official process to evaluate trustworthiness and reliability based on the accumulation of all information, including the psychologist report prior to authorizing UAA.

The inspectors reviewed the corrective actions outlined in the August 21, 2009, Apparent Cause Evaluation, and CCNPP's review of previous industry OE dated October 2, 2009. The inspectors concluded that the root cause analysis was thorough and complete. Additionally, corrective actions taken were appropriate and timely. This violation is closed.
Inspection Report# : 2009005 *(pdf)*

Significance: N/A Nov 20, 2009
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Specifically, Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Constellation appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, Constellation occasionally used generic operability statements as the basis for operability decisions which resulted in inadequately documented conclusions. Corrective actions taken to address the problems identified in Constellation's corrective action process were typically implemented in a timely manner. However, for one issue reviewed by the inspectors, inadequate implementation of corrective actions resulted in one NRC-identified finding. In another case, corrective action for risk assessment tool deficiencies were not fully effective.

The inspectors also concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to CCNPP operations. In addition, based on those items selected for review by the inspectors, Constellation's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2009007 *(pdf)*

Last modified : September 02, 2010

Calvert Cliffs 1
3Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Reviews of the Turbine Control System and the Nuclear Steam Supply System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not perform adequate design reviews associated with modifications to the turbine control system and the nuclear steam supply system (NSSS). Specifically, Constellation did not adequately evaluate the potential adverse impacts of removal of the power load unbalance (PLU) turbine trip on the quality of safety related systems, structure, and components (SSCs) such as the main steam safety valves (MSSVs) and power operated relief valves (PORVs). In addition, during significant changes to plant design such as steam generator replacements and power uprates, Constellation did not conduct an adequate evaluation to determine if the turbine bypass valve (TBV)/atmospheric dump valve (ADV) design specification of opening within 3 seconds after receiving the quick open signal would still be sufficient to prevent lifting MSSVs. Immediate corrective actions included entering these issues into their corrective action program (CAP) and performing an immediate operability determination and a probabilistic risk analysis.

This finding is more than minor because it affected the Initiating Event cornerstone attribute of design control and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the removal of the PLU turbine trip and the modifications to the NSSS could challenge primary and secondary overpressure protection devices and result in a stuck open MSSV or PORV. The inspectors evaluated this finding using an SDP phase 2 analysis and determined that the issue is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not adequately make safety-significant decisions using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. (H.1.a of IMC 0310).

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
Did Not Establish Preventive Maintenance Program for Switchyard Panels

Green. A self-revealing finding of very low safety significance was identified because Constellation did not establish an appropriate preventive maintenance program for the 125 VDC switchyard distribution panels in accordance with MN-1, "Maintenance Program." The 125 VDC switchyard distribution system supplies power to the switchyard direct current (DC) loads for the operation of switchyard circuit breakers, emergency lights, and protective relays. Immediate corrective actions included entering this issue into the CAP and performing an inspection of all 125 VDC switchyard distribution panels. Long-term corrective actions planned include establishing an adequate preventative measure (PM) program for the 125 VDC switchyard distribution panels.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety function. In addition, if left uncorrected, the performance deficiency could lead to a more significant safety concern. Specifically, the failure to establish an adequate preventive maintenance program for the 125 VDC switchyard distribution panels could preclude the identification of equipment deficiencies, such as loose connections, that could result in a plant transient. The finding is of very low safety significance because it did

not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not use OE information, including vendor recommendations to support plant safety. Specifically, the Constellation did not implement and institutionalize OE through changes to station processes, procedures, equipment, and training associated with the switchyard preventive maintenance program (P.2.b of IMC 0305).

Inspection Report# : 2010003 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Translate Design Calculation Setpoint of Phase Overcurrent Relay on Feeder Breakers
The team identified a finding for failure to translate the design calculations of phase overcurrent relays on 13 kV feeder breakers into the actual relay settings. The overcurrent relays protect the unit service transformer against faults in the primary or secondary side windings. The design specified limit of 1200 amps was determined based on the breaker rating of the feeder breakers. Constellation determined the as-found relay setting for the feeder breakers was 1440 amps which exceeded the rating of the feeder breakers. The team determined that due to the as-found relay setting, certain phase overcurrent conditions could potentially cause the breakers to fail prior to the phase overcurrent relay sensing the degraded condition. This condition could affect the recovery of the safey buses from the electrical grid. Constellation entered this issue into the corrective action program (condition report 2010-002123).

This finding is more than minor because it affected the Initiating Events Cornerstone attribute of equipment performance for ensuring the availability and reliability of systems to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Also, this issue was similar to Example 3j of IMC 0612, Appendix E, "Examples of Minor Issues," because the condition resulted in reasonable doubt of the operability of the component, and additional analysis was necessary to verify operability. This finding was determined to be of very low safety significance because the design deficiency did not result in an actual loss of function based on Constellation's determination that the maximum load current possible would not challenge the feeder breaker ratings. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The finding did not have a cross-cuting aspect because the most significant contributor to the perfoormance deficiency was not reflective of current licensee performance.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Thoroughly Evaluate and Promptly Correct Degraded Conditions Associated with Auxiliary Building Roof Leakage
A self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix , Criterion XVI "Corrective Actions," was identified, because auxiliary building roof leakage into the Unit 1 and Unit 2 45 foot switchgear rooms was identified on several occasions from 2002 to 2009, but was not thoroughly evaluated and corrective actions to this condition adverse to quality were untimely and ineffective. This degraded condition led to the failure of the auxiliary building to provide protection to several safety related systems from external events, a ground on a reactor coolant pump (RCP) bus, and ultimately a Unit 1 reactor trip. Immediate corrective actions included: repair of degraded areas of the roof; walk downs of other buildings within the protected area that could be susceptible to damage to electrical equipment due to water intrusion; issuance of standing orders to incude guidance regarding priortizing work orders due to roof leakage; and identifying further actions to take during periods of snow or rain to ensure plant equipment is not affected. Constellation entered the issue into their corrective action program (Condition Report (CR) 2010-001351). Long-term corrective actions include implementation of improved plant processes for categorization, prioritization and management of roofing issues.

The findings is more than minor because it is associated with the protection against external factors attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The team

determined the finding had a very low safety significance because, although it caused the reactor trip, it did not contribute to the likelihood that mitigation equipment or functions will not be available. The cause of the finding is related to the crosscutting area of Problem Identification and Resolution, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the problems related to the water intrusion into the auxiliary building such that the resolutions addressed the causes and extent-of-condition. This includes properly classifying, prioritizing, and evaluating the condition adverse to quality.
Inspection Report# : 2010006 *(pdf)*

Mitigating Systems

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Degraded Conditions Associated with CO-8 Relays and Implement Timely and Effective Action to Correct the Condition Adverse to Quality.
The team identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not thoroughly evaluate and correct a degraded condition of a CO-8 relay disc sticking or binding issues which can adversely impact the function of the EDGs and the electrical distribution protection scheme. Specifically, following the February 18, 2010 event, Constellation did not identify and adequately evaluate the recent CO-8 relay failures due to sticking or binding of the induction discs in the safety related and non-safety related applications. Constellation entered this issue into the corrective action pprogram (CR 20100004673).

The finding is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone, and it adversely affected the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance safety function. The cause of the finding is related to the crosscutting area of Problem Identification and Resoluton, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the previous station operating experience of CO-8 relay induction disc sticking and binding issues such that resolutions addressed the causes and extent-of-condition.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failed to Establish Adequate Procedures for Letdown Restoration
A self-revealing NCV of Technical Specification (TS) 5.4.1.a, "Procedures" was identified for failure to establish adequate procedures for restoration of Chemical and Volume Control System (CVCS) letdown flow. On February 18, 2010, an electrical ground fault caused a Unit 1 reactor trip, loss of the 500 kV Red Bus, and CVCS letdown isolation as expected on the ensuring instrument bus 1Y10 electrical transient. Deficient operating instructions prevented timely restoration of letdown flow following the initial transient. Pressurizer level remained above the range specified in Emergency Operating Procedure (EOP)-1 for an extended period because of the operators' inability to restore letdown. This ultimately led to exceeding the TS high limit for pressurizer level. CVCS Operating Instruction OI-2A was subsequently revised, providing necessary guidance for re-opening the letdown system excess flow check valve to restore letdown flow. This event was entered into the licensee's correction action program (CR 2010-001378).

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of human performance resources aspect H.2(c), because Constellation did not ensure that procedures for restoring CVCS letdown were complete and accurate.
Inspection Report# : 2010006 *(pdf)*

Significance: G Mar 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain Surveillance Procedures Associated with Fire Barrier and Penetration Seal Inspections
The inspectors identified a non-cited violation (NCV) of Calvert Cliffs Renewed Facility Operating License Numbers DPR-53 and DPR-54, License Condition 2.E, because Constellation did not adequately implement and maintain surveillance procedures associated with fire barrier and penetration seal inspections. As a result, Constellation did not identify degraded conditions associated with one fire barrier and three penetration seals. Immediate actions taken included entering the appropriate Technical Requirement Manual (TRM) action statement, establishing an hourly fire tour until temporary repairs were completed, and entering each issue into their corrective action program (CAP) for resolution.

The finding is more than minor because it was associated with the external factors attribute (i.e. fire) of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability and capability of systems that respond to initiation events to prevent undesirable consequences. Specifically, the degraded conditions had to be repaired or evaluated to ensure that the barriers/penetrations would meet their design function. In addition, if left uncorrected the finding could result in a more significant safety concern in that that the condition could continue to degrade such that the barriers/penetrations could no longer perform their specified function and/or result in the inability of Constellation to recognize additional degraded fire barriers/penetrations. The inspectors determined that the finding is of very low safety significance because there was a non-degraded automatic full area water based fire suppression system in the exposing fire area. This finding has a crosscutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures for fire penetration seal inspections (H.4.b of IMC 0310).

Inspection Report# : 2010002 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Associated with the Flooding of a Saltwater Pump Pit
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” because Constellation did not correctly translate the internal flooding design basis review for the saltwater (SW) pump pit compartments into specifications, procedures and instructions. Specifically, Constellation did not translate design basis flooding considerations and provisions as described in their internal plant flooding design evaluation into procedures and instructions to assure that the SW pumps would not be submerged during normal operating conditions. As a result, the No. 21 SW pump pit flooded on December 10, 2008. Constellation entered this issue into their corrective action program (CAP) for resolution as condition reports (CR)-2009-006077, CR-2009-009030 and CR-2010-00167. The immediate corrective action included initiating a CR to document some of the design considerations and provisions needed to prevent the SW pump pit compartments from flooding. The planned corrective actions included developing a preventive maintenance instruction to perform periodic maintenance on the floor drains located in the pump pit compartments and to perform an engineering evaluation to document all of the design provisions to demonstrate the flooding protection of the SW pumps.

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 to ensure the availability and reliability of the SW system, which responds to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Constellation did not maintain adequate design control to prevent a dry SW pump pit from flooding during normal operating conditions, which affected the No. 21 SW pump availability and reliability. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk significant due to external events. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the internal flooding design basis review occurred in May of 1991. Therefore, the inspectors concluded that this

did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely Declaration of Notice of Unusual Event
The inspectors identified an NCV of 10 CFR Part 50.47(b)(4) for the failure to implement the emergency classification and action level scheme in a timely manner during an actual event due to the complete loss of communications to one off-site agency. Specifically, on July 4, 2010, phone communications to St. Mary's County were lost and conditions requiring declaration of a Notice of Unusual Event (NOUE) were met. However, Constellation did not declare the NOUE in a timely manner. Shortly after Constellation determined that conditions met the declaration criteria for an NOUE, the phone system was restored. Constellation entered this issue into their corrective action program (CAP) for resolution. Immediate corrective action included establishing a standing order to provide operators guidance in the event of a loss of communications.

The finding is greater than minor because it is associated with the Emergency Preparedness (EP) cornerstone attribute of emergency response organization performance (actual event response) and it adversely affects the cornerstone objective to ensure that Constellation was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the finding is of very low safety significance in that it was associated with an actual event where the operators failed to declare an NOUE in a timely manner during a complete loss of communications to one off-site agency. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not make a safety significant decision using a systematic process to declare the NOUE in a timely manner. Specifically, Constellation did not use a systematic process such as a standing order or procedure to provide guidance to operators to address a loss of communications. In addition, Constellation did not adequately implement emergency response organization's (ERO) roles and authorities as designed to obtain interdisciplinary input on safety significance decisions such as event classification (H.1.a of IMC 0310).

Inspection Report# : 2010004 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Dose Assessment with the Containment Outage Door Open
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its implementing procedures when the CCNPP Technical Specifications (TSs) were changed in 2001, allowing core alterations to be performed with the containment outage door (COD) open. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-004951. Constellation's corrective actions included revising site procedures to provide for the monitoring and measuring any post-fuel handling incident (FHI) release which may occur through the open containment equipment hatch and COD during refueling activities.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance attribute of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was a risk-significant planning standard (RSPS) problem; but it was not a RSPS functional failure of the Calvert Cliffs dose assessment process. This was not a degraded RSPS function because Calvert Cliffs maintained good procedures and practices for assessing unmonitored releases in the event of an on-site radiological event that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. The inspectors did not assign a cross-cutting aspect to this finding because the inspectors determined that the performance deficiency was a result of a latent issue in that the inadequate review of the change occurred in 2001. Therefore, the inspectors concluded that this did not reflect current performance.

Inspection Report# : 2009005 *(pdf)*

Significance:  Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide for Adequate Compensatory Measures with the Wide Range Noble Gas Monitor Out of Service
The inspectors identified a Green NCV of 10 CFR 50.54(q), "Conditions of Licenses," because Constellation did not properly maintain the conditions of the CCNPP Emergency Plan. Specifically, Constellation did not implement timely changes to the Emergency Plan and its dose assessment implementing procedures when CCNPP transitioned from the NUREG-0654 emergency action level (EAL) scheme to the NUMARC NESP-007 EAL scheme in 1993. The change in the EAL schemes resulted in additional site area emergency (SAE) and general emergency (GE) classification levels based on effluent monitor radiation levels. When these new EALs were added, Constellation did not revise their Emergency Response Plan Implementing Procedure (ERPIP)-821 to consider the radiation levels, which would exist at the SAE and GE thresholds. The specific concern involved the inability to take the compensatory measures when the wide range noble gas monitor (WRNGM) was out of service; manual radiation readings could not be taken near the WRNGM due to the radiation levels which could exist at the SAE and GE conditions. Constellation entered this issue into their corrective action program (CAP) for resolution as condition report (CR)-2009-003720. Constellation's corrective actions included: the installation of a radiation meter at the 10-meter distance from the main stack that was remotely readable; revision of emergency Response Plan Implementing Procedure (ERPIP)-821 to account for the current Calvert Cliffs EAL thresholds; and the performance of a human performance investigation to provide for additional corrective actions to assure that plant changes are evaluated for impact and necessary changes to the emergency plan and its implementing procedures.

The finding is more than minor because it affected the Emergency Response Organization (ERO) performance and procedure quality attributes of the Emergency Preparedness (EP) Cornerstone to ensure that Constellation is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined that the finding is of very low safety significance (Green). Specifically, the inspectors utilized IMC 0609, Appendix B, Section 4.9 and Sheet 1, "Failure to Comply," and determined that the failure to comply with an aspect of the Emergency Plan related to dose assessment (10 CFR 50.47(b)(9)) was an RSPS problem; but it was not a RSPS functional failure of the CCNPP dose assessment process. This was not a degraded RSPS function because Calvert Cliffs EAL scheme has redundant EALs that provided assurance that this performance deficiency ultimately would not have affected the outcome of protecting the health and safety of the public or of station personnel. This finding has a cross-cutting aspect in the area of identification and resolution of problems because the WRNGM has failed in the past (including as recently as December 2008 and May 2009), yet Constellation did not appropriately evaluate the proposed compensatory actions in a manner to assure the dose assessment function was not negatively affected. Specifically, the provisions of the ERPIP-821 sampling procedure had repeatedly been relied upon, but in fact were not able to satisfy the dose assessment functions required by the CCNPP Emergency Plan.

This item was discussed in 2010-002 Report.

Inspection Report# : 2009005 *(pdf)*

Significance: G Nov 20, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria
The inspectors identified a Green NCV of 10 CFR 50.54(q), for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE). Constellation's initial compensatory and corrective actions were inadequate because the compensatory action did not reflect the actual global bay conditions, thereby preventing operators from correctly implementing the EAL; and, the proposed corrective action, although not implemented, would have resulted in a decrease in effectiveness of the emergency plan. The immediate corrective actions included revising the compensatory measures to ensure that operators measure the bay water level at the appropriate location (i.e., in front of the trash racks). The planned corrective actions included installing a bay level monitoring system.

The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and, it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305).

Inspection Report# : 2009007 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: SL-IV Dec 31, 2009
Identified By: NRC

Item Type: NCV NonCited Violation
Information Technology Analyst Failure to Disclose Prior Criminal History to Gain Unescorted Access Authorization
This severity level IV NCV identified on July 8, 2009, stated that contrary to 10 CFR 50.34(c) and the CCNPP Physical Security Plan, a former ITA deliberately failed to disclose elements of his criminal history when applying for UAA at CCNPP. This violation was documented in a July 8, 2009, NRC letter to CCNPP. CCNPP determined that the event occurred because the provisions within NEI 03-01, "Nuclear Power Plant Access Authorization Program," used to determine trustworthiness and reliability were not properly applied. This was evident in that the security access procedure, used by the reviewing official, did not identify the expectation to consider the psychologist report and comments, which lead directly to granting the ITA UAA prior to the discovery of potentially disqualifying information. To correct this performance deficiency, several corrective actions were implemented including: communicating the requirements in NEI 03-01 to access investigators that require a review of the psychologist report prior to determination of authorizing UAA, verifying all PADS reports were reviewed to ensure validity and accuracy of the information, issuing Operating Experience (OE) for this event, updating the security procedures and the security access guideline to accurately reflect the NEI 03-01 guidance, and performing a self-assessment of the Security Access Standard to identify vague or interpretive guidance in other processes. Additionally, the CAP opened an action to track and complete an effectiveness review of the security background investigator's training material and reviewing official process to evaluate trustworthiness and reliability based on the accumulation of all information, including the psychologist report prior to authorizing UAA.

The inspectors reviewed the corrective actions outlined in the August 21, 2009, Apparent Cause Evaluation, and CCNPP's review of previous industry OE dated October 2, 2009. The inspectors concluded that the root cause analysis was thorough and complete. Additionally, corrective actions taken were appropriate and timely. This violation is closed.
Inspection Report# : 2009005 *(pdf)*

Significance: N/A Nov 20, 2009
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Specifically, Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Constellation appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, Constellation occasionally used generic operability statements as the basis for operability decisions which resulted in inadequately documented conclusions. Corrective actions taken to address the problems identified in Constellation's corrective action process were typically implemented in a timely manner. However, for one issue reviewed by the inspectors, inadequate implementation of corrective actions resulted in one NRC-identified finding. In another case, corrective action for risk assessment tool deficiencies were not fully effective.

The inspectors also concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to CCNPP operations. In addition, based on those items selected for review by the inspectors, Constellation's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2009007 *(pdf)*

Last modified : November 29, 2010

Calvert Cliffs 1
4Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Reviews of the Turbine Control System and the Nuclear Steam Supply System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not perform adequate design reviews associated with modifications to the turbine control system and the nuclear steam supply system (NSSS). Specifically, Constellation did not adequately evaluate the potential adverse impacts of removal of the power load unbalance (PLU) turbine trip on the quality of safety related systems, structure, and components (SSCs) such as the main steam safety valves (MSSVs) and power operated relief valves (PORVs). In addition, during significant changes to plant design such as steam generator replacements and power uprates, Constellation did not conduct an adequate evaluation to determine if the turbine bypass valve (TBV)/atmospheric dump valve (ADV) design specification of opening within 3 seconds after receiving the quick open signal would still be sufficient to prevent lifting MSSVs. Immediate corrective actions included entering these issues into their corrective action program (CAP) and performing an immediate operability determination and a probabilistic risk analysis.

This finding is more than minor because it affected the Initiating Event cornerstone attribute of design control and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the removal of the PLU turbine trip and the modifications to the NSSS could challenge primary and secondary overpressure protection devices and result in a stuck open MSSV or PORV. The inspectors evaluated this finding using an SDP phase 2 analysis and determined that the issue is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not adequately make safety-significant decisions using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. (H.1.a of IMC 0310).

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
Did Not Establish Preventive Maintenance Program for Switchyard Panels

Green. A self-revealing finding of very low safety significance was identified because Constellation did not establish an appropriate preventive maintenance program for the 125 VDC switchyard distribution panels in accordance with MN-1, "Maintenance Program." The 125 VDC switchyard distribution system supplies power to the switchyard direct current (DC) loads for the operation of switchyard circuit breakers, emergency lights, and protective relays. Immediate corrective actions included entering this issue into the CAP and performing an inspection of all 125 VDC switchyard distribution panels. Long-term corrective actions planned include establishing an adequate preventative measure (PM) program for the 125 VDC switchyard distribution panels.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety function. In addition, if left uncorrected, the performance deficiency could lead to a more significant safety concern. Specifically, the failure to establish an adequate preventive maintenance program for the 125 VDC switchyard distribution panels could preclude the identification of equipment deficiencies, such as loose connections, that could result in a plant transient. The finding is of very low safety significance because it did

not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not use OE information, including vendor recommendations to support plant safety. Specifically, the Constellation did not implement and institutionalize OE through changes to station processes, procedures, equipment, and training associated with the switchyard preventive maintenance program (P.2.b of IMC 0305).

Inspection Report# : 2010003 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Translate Design Calculation Setpoint of Phase Overcurrent Relay on Feeder Breakers
The team identified a finding for failure to translate the design calculations of phase overcurrent relays on 13 kV feeder breakers into the actual relay settings. The overcurrent relays protect the unit service transformer against faults in the primary or secondary side windings. The design specified limit of 1200 amps was determined based on the breaker rating of the feeder breakers. Constellation determined the as-found relay setting for the feeder breakers was 1440 amps which exceeded the rating of the feeder breakers. The team determined that due to the as-found relay setting, certain phase overcurrent conditions could potentially cause the breakers to fail prior to the phase overcurrent relay sensing the degraded condition. This condition could affect the recovery of the safey buses from the electrical grid. Constellation entered this issue into the corrective action program (condition report 2010-002123).

This finding is more than minor because it affected the Initiating Events Cornerstone attribute of equipment performance for ensuring the availability and reliability of systems to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Also, this issue was similar to Example 3j of IMC 0612, Appendix E, "Examples of Minor Issues," because the condition resulted in reasonable doubt of the operability of the component, and additional analysis was necessary to verify operability. This finding was determined to be of very low safety significance because the design deficiency did not result in an actual loss of function based on Constellation's determination that the maximum load current possible would not challenge the feeder breaker ratings. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The finding did not have a cross-cuting aspect because the most significant contributor to the perfoormance deficiency was not reflective of current licensee performance.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Thoroughly Evaluate and Promptly Correct Degraded Conditions Associated with Auxiliary Building Roof Leakage
A self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix , Criterion XVI "Corrective Actions," was identified, because auxiliary building roof leakage into the Unit 1 and Unit 2 45 foot switchgear rooms was identified on several occasions from 2002 to 2009, but was not thoroughly evaluated and corrective actions to this condition adverse to quality were untimely and ineffective. This degraded condition led to the failure of the auxiliary building to provide protection to several safety related systems from external events, a ground on a reactor coolant pump (RCP) bus, and ultimately a Unit 1 reactor trip. Immediate corrective actions included: repair of degraded areas of the roof; walk downs of other buildings within the protected area that could be susceptible to damage to electrical equipment due to water intrusion; issuance of standing orders to incude guidance regarding priortizing work orders due to roof leakage; and identifying further actions to take during periods of snow or rain to ensure plant equipment is not affected. Constellation entered the issue into their corrective action program (Condition Report (CR) 2010-001351). Long-term corrective actions include implementation of improved plant processes for categorization, prioritization and management of roofing issues.

The findings is more than minor because it is associated with the protection against external factors attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The team

determined the finding had a very low safety significance because, although it caused the reactor trip, it did not contribute to the likelihood that mitigation equipment or functions will not be available. The cause of the finding is related to the crosscutting area of Problem Identification and Resolution, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the problems related to the water intrusion into the auxiliary building such that the resolutions addressed the causes and extent-of-condition. This includes properly classifying, prioritizing, and evaluating the condition adverse to quality.
Inspection Report# : 2010006 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged SR Cables
The inspectors identified an non cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," because Constellation did not establish and take adequate measures for conditions adverse to quality associated with submerged safety related (SR) cables including the 1A diesel generator (DG) cables. As a result, SR cables were subjected to a submerged environment for unknown or extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination for the 1A DG, and increasing the frequency of manhole inspections. Long-term corrective actions (C/As) planned include evaluating the need for sump pumps and including all SR manholes in the preventive maintenance routine.

The finding is more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance 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, repeated submergence of medium voltage cables can cause excessive aging and degradation in the exposed sections of cable, which could significantly shorten its qualified life and cause unexpected failures. The inspectors determined that the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. This finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not implement and institutionalize OE through changes to station processes and procedures associated with submerged cables (P.2.b of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Written Procedures During Calibration of the 1A DG SR Ventilation Temperature Controller
A self-revealing finding of very low safety significance was identified because Constellation did not follow written procedures during the calibration of 1TIC10541 temperature controller. Specifically, the incorrect calibration of the 1TIC10541 temperature controller created a low air flow condition within portions of the SR ventilation system for the 1A DG and could challenge the safety function of the 1A DG. Immediate corrective action included declaring the 1A DG inoperable until 1TIC10541 was correctly calibrated and tested, and conducting a prompt investigation into the incorrect calibration of 1TIC1041.

This finding is more than minor because it was associated with the Mitigating System cornerstone attribute of human performance 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 improper calibration of 1TIC10541 prevented the 1A DG SR ventilation system from fulfilling its design function and caused reasonable doubt whether the 1A DG could fulfill its safety function. The inspectors determined that the finding was of very low safety significance because the issue was a design or qualification deficiency confirmed not to result in loss of operability or availability of the 1A DG. This finding has a cross-cutting aspect in the area of human performance,

work practices, because Constellation did not ensure that personnel do not proceed in the face of uncertainty or unexpected circumstances (H.4.a of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Functionality Review of 0C Diesel Degraded Condition.
The inspectors identified a finding of very low safety significance because Constellation did not conduct an adequate functionality review following failure of the 0C DG (the station blackout (SBO) diesel) battery charger. Specifically, Constellation did not take into account the Appendix R mission time in the functionality review. As a result, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger out-of-service (OOS). Immediate corrective actions included entering this issue in the CAP and providing instructions to operators to declare the 0C diesel not available anytime its associated battery charger is taken OOS. Additional corrective actions planned include changing OI-26A, “125 Volt Direct Current (VDC) System,” to reflect that the battery charger is required to support the 0C diesel functionality.

The finding is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger OOS. The inspectors determined that the finding is of very low safety significance because it only affected the ability to reach and maintain cold shutdown conditions. The finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure complete, accurate, and up-to-date procedures (OI-26A) were available and adequate to assure nuclear safety (H.2.c of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Degraded Conditions Associated with CO-8 Relays and Implement Timely and Effective Action to Correct the Condition Adverse to Quality.
The team identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not thoroughly evaluate and correct a degraded condition of a CO-8 relay disc sticking or binding issues which can adversely impact the function of the EDGs and the electrical distribution protection scheme. Specifically, following the February 18, 2010 event, Constellation did not identify and adequately evaluate the recent CO-8 relay failures due to sticking or binding of the induction discs in the safety related and non-safety related applications. Constellation entered this issue into the corrective action pprogram (CR 20100004673).

The finding is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone, and it adversely affected the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance safety function. The cause of the finding is related to the crosscutting area of Problem Identification and Resoluton, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the previous station operating experience of CO-8 relay induction disc sticking and binding issues such that resolutions addressed the causes and extent-of-condition.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failed to Establish Adequate Procedures for Letdown Restoration

A self-revealing NCV of Technical Specification (TS) 5.4.1.a, "Procedures" was identified for failure to establish adequate procedures for restoration of Chemical and Volume Control System (CVCS) letdown flow. On February 18, 2010, an electrical ground fault caused a Unit 1 reactor trip, loss of the 500 kV Red Bus, and CVCS letdown isolation as expected on the ensuring instrument bus 1Y10 electrical transient. Deficient operating instructions prevented timely restoration of letdown flow following the initial transient. Pressurizer level remained above the range specified in Emergency Operating Procedure (EOP)-1 for an extended period because of the operators' inability to restore letdown. This ultimately led to exceeding the TS high limit for pressurizer level. CVCS Operating Instruction OI-2A was subsequently revised, providing necessary guidance for re-opening the letdown system excess flow check valve to restore letdown flow. This event was entered into the licensee's correction action program (CR 2010-001378).

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of human performance resources aspect H.2(c), because Constellation did not ensure that procedures for restoring CVCS letdown were complete and accurate.
Inspection Report# : 2010006 *(pdf)*

Significance: G Mar 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement and Maintain Surveillance Procedures Associated with Fire Barrier and Penetration Seal Inspections
The inspectors identified a non-cited violation (NCV) of Calvert Cliffs Renewed Facility Operating License Numbers DPR-53 and DPR-54, License Condition 2.E, because Constellation did not adequately implement and maintain surveillance procedures associated with fire barrier and penetration seal inspections. As a result, Constellation did not identify degraded conditions associated with one fire barrier and three penetration seals. Immediate actions taken included entering the appropriate Technical Requirement Manual (TRM) action statement, establishing an hourly fire tour until temporary repairs were completed, and entering each issue into their corrective action program (CAP) for resolution.

The finding is more than minor because it was associated with the external factors attribute (i.e. fire) of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability and capability of systems that respond to initiation events to prevent undesirable consequences. Specifically, the degraded conditions had to be repaired or evaluated to ensure that the barriers/penetrations would meet their design function. In addition, if left uncorrected the finding could result in a more significant safety concern in that that the condition could continue to degrade such that the barriers/penetrations could no longer perform their specified function and/or result in the inability of Constellation to recognize additional degraded fire barriers/penetrations. The inspectors determined that the finding is of very low safety significance because there was a non-degraded automatic full area water based fire suppression system in the exposing fire area. This finding has a crosscutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures for fire penetration seal inspections (H.4.b of IMC 0310).

Inspection Report# : 2010002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely Declaration of Notice of Unusual Event
The inspectors identified an NCV of 10 CFR Part 50.47(b)(4) for the failure to implement the emergency classification and action level scheme in a timely manner during an actual event due to the complete loss of communications to one off-site agency. Specifically, on July 4, 2010, phone communications to St. Mary's County were lost and conditions requiring declaration of a Notice of Unusual Event (NOUE) were met. However, Constellation did not declare the NOUE in a timely manner. Shortly after Constellation determined that conditions met the declaration criteria for an NOUE, the phone system was restored. Constellation entered this issue into their corrective action program (CAP) for resolution. Immediate corrective action included establishing a standing order to provide operators guidance in the event of a loss of communications.

The finding is greater than minor because it is associated with the Emergency Preparedness (EP) cornerstone attribute of emergency response organization performance (actual event response) and it adversely affects the cornerstone objective to ensure that Constellation was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the finding is of very low safety significance in that it was associated with an actual event where the operators failed to declare an NOUE in a timely manner during a complete loss of communications to one off-site agency. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not make a safety significant decision using a systematic process to declare the NOUE in a timely manner. Specifically, Constellation did not use a systematic process such as a standing order or procedure to provide guidance to operators to address a loss of communications. In addition, Constellation did not adequately implement emergency response organization's (ERO) roles and authorities as designed to obtain interdisciplinary input on safety significance decisions such as event classification (H.1.a of IMC 0310).

Inspection Report# : 2010004 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Procedures to Calibrate and Maintain Ventilaton and Radiation Effluent Monitoring Equipment.
The inspectors identified a finding of very low safety significance associated with a non-cited violation (NCV) of Technical Specification 5.4.1.a, "Procedures," involving Constellation's failure to implement procedures to calibrate and maintain ventilation and radiation effluent monitoring equipment. Specifically, on December 9, 2010, refurbishment of the steam generator (SG) nozzle dams and manway stud tensioners was in progress in the material processing facility; at that time, only one exhaust train of the ventilation system was in operation and a negative pressure of approximately one-half inch of water was not being maintained. Immediate corrective actions included stopping all work in the building and completing the necessary repairs before restarting activities.

The finding was more than minor because the failure to maintain the ventilation and radiation monitoring equipment affects the Radiation Protection cornerstone to ensure 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 determined that the finding is of very low safety significance because it did not impair Constellation's ability to assess dose. Constellation did assess dose and the limits of 10 CFR 50 Appendix I and 10 CFR 20.1301(e) were not exceeded. The finding also has a cross-cutting aspect in the area of problem identification and resolution, Corrective Action, because appropriate corrective actions were not taken in a timely manner. The exhaust fan was out-of-service (OOS) for eight months, the supply fan was OOS for seven years, and the radiation monitor was OOS for most of four years (P.1.d or IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 03, 2011

Calvert Cliffs 1
1Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control Reviews of the Turbine Control System and the Nuclear Steam Supply System
The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Constellation did not perform adequate design reviews associated with modifications to the turbine control system and the nuclear steam supply system (NSSS). Specifically, Constellation did not adequately evaluate the potential adverse impacts of removal of the power load unbalance (PLU) turbine trip on the quality of safety related systems, structure, and components (SSCs) such as the main steam safety valves (MSSVs) and power operated relief valves (PORVs). In addition, during significant changes to plant design such as steam generator replacements and power uprates, Constellation did not conduct an adequate evaluation to determine if the turbine bypass valve (TBV)/atmospheric dump valve (ADV) design specification of opening within 3 seconds after receiving the quick open signal would still be sufficient to prevent lifting MSSVs. Immediate corrective actions included entering these issues into their corrective action program (CAP) and performing an immediate operability determination and a probabilistic risk analysis.

This finding is more than minor because it affected the Initiating Event cornerstone attribute of design control and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the removal of the PLU turbine trip and the modifications to the NSSS could challenge primary and secondary overpressure protection devices and result in a stuck open MSSV or PORV. The inspectors evaluated this finding using an SDP phase 2 analysis and determined that the issue is of very low safety significance. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not adequately make safety-significant decisions using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. (H.1.a of IMC 0310).

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
Did Not Establish Preventive Maintenance Program for Switchyard Panels

Green. A self-revealing finding of very low safety significance was identified because Constellation did not establish an appropriate preventive maintenance program for the 125 VDC switchyard distribution panels in accordance with MN-1, "Maintenance Program." The 125 VDC switchyard distribution system supplies power to the switchyard direct current (DC) loads for the operation of switchyard circuit breakers, emergency lights, and protective relays. Immediate corrective actions included entering this issue into the CAP and performing an inspection of all 125 VDC switchyard distribution panels. Long-term corrective actions planned include establishing an adequate preventative measure (PM) program for the 125 VDC switchyard distribution panels.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety function. In addition, if left uncorrected, the performance deficiency could lead to a more significant safety concern. Specifically, the failure to establish an adequate preventive maintenance program for the 125 VDC switchyard distribution panels could preclude the identification of equipment deficiencies, such as loose connections, that could result in a plant transient. The finding is of very low safety significance because it did

not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not use OE information, including vendor recommendations to support plant safety. Specifically, the Constellation did not implement and institutionalize OE through changes to station processes, procedures, equipment, and training associated with the switchyard preventive maintenance program (P.2.b of IMC 0305).

Inspection Report# : 2010003 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Translate Design Calculation Setpoint of Phase Overcurrent Relay on Feeder Breakers
The team identified a finding for failure to translate the design calculations of phase overcurrent relays on 13 kV feeder breakers into the actual relay settings. The overcurrent relays protect the unit service transformer against faults in the primary or secondary side windings. The design specified limit of 1200 amps was determined based on the breaker rating of the feeder breakers. Constellation determined the as-found relay setting for the feeder breakers was 1440 amps which exceeded the rating of the feeder breakers. The team determined that due to the as-found relay setting, certain phase overcurrent conditions could potentially cause the breakers to fail prior to the phase overcurrent relay sensing the degraded condition. This condition could affect the recovery of the safey buses from the electrical grid. Constellation entered this issue into the corrective action program (condition report 2010-002123).

This finding is more than minor because it affected the Initiating Events Cornerstone attribute of equipment performance for ensuring the availability and reliability of systems to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Also, this issue was similar to Example 3j of IMC 0612, Appendix E, "Examples of Minor Issues," because the condition resulted in reasonable doubt of the operability of the component, and additional analysis was necessary to verify operability. This finding was determined to be of very low safety significance because the design deficiency did not result in an actual loss of function based on Constellation's determination that the maximum load current possible would not challenge the feeder breaker ratings. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The finding did not have a cross-cuting aspect because the most significant contributor to the perfoormance deficiency was not reflective of current licensee performance.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Thoroughly Evaluate and Promptly Correct Degraded Conditions Associated with Auxiliary Building Roof Leakage
A self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix , Criterion XVI "Corrective Actions," was identified, because auxiliary building roof leakage into the Unit 1 and Unit 2 45 foot switchgear rooms was identified on several occasions from 2002 to 2009, but was not thoroughly evaluated and corrective actions to this condition adverse to quality were untimely and ineffective. This degraded condition led to the failure of the auxiliary building to provide protection to several safety related systems from external events, a ground on a reactor coolant pump (RCP) bus, and ultimately a Unit 1 reactor trip. Immediate corrective actions included: repair of degraded areas of the roof; walk downs of other buildings within the protected area that could be susceptible to damage to electrical equipment due to water intrusion; issuance of standing orders to incude guidance regarding priortizing work orders due to roof leakage; and identifying further actions to take during periods of snow or rain to ensure plant equipment is not affected. Constellation entered the issue into their corrective action program (Condition Report (CR) 2010-001351). Long-term corrective actions include implementation of improved plant processes for categorization, prioritization and management of roofing issues.

The findings is more than minor because it is associated with the protection against external factors attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The team

determined the finding had a very low safety significance because, although it caused the reactor trip, it did not contribute to the likelihood that mitigation equipment or functions will not be available. The cause of the finding is related to the crosscutting area of Problem Identification and Resolution, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the problems related to the water intrusion into the auxiliary building such that the resolutions addressed the causes and extent-of-condition. This includes properly classifying, prioritizing, and evaluating the condition adverse to quality.
Inspection Report# : 2010006 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged SR Cables
The inspectors identified an non cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," because Constellation did not establish and take adequate measures for conditions adverse to quality associated with submerged safety related (SR) cables including the 1A diesel generator (DG) cables. As a result, SR cables were subjected to a submerged environment for unknown or extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination for the 1A DG, and increasing the frequency of manhole inspections. Long-term corrective actions (C/As) planned include evaluating the need for sump pumps and including all SR manholes in the preventive maintenance routine.

The finding is more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance 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, repeated submergence of medium voltage cables can cause excessive aging and degradation in the exposed sections of cable, which could significantly shorten its qualified life and cause unexpected failures. The inspectors determined that the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. This finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not implement and institutionalize OE through changes to station processes and procedures associated with submerged cables (P.2.b of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Written Procedures During Calibration of the 1A DG SR Ventilation Temperature Controller
A self-revealing finding of very low safety significance was identified because Constellation did not follow written procedures during the calibration of 1TIC10541 temperature controller. Specifically, the incorrect calibration of the 1TIC10541 temperature controller created a low air flow condition within portions of the SR ventilation system for the 1A DG and could challenge the safety function of the 1A DG. Immediate corrective action included declaring the 1A DG inoperable until 1TIC10541 was correctly calibrated and tested, and conducting a prompt investigation into the incorrect calibration of 1TIC1041.

This finding is more than minor because it was associated with the Mitigating System cornerstone attribute of human performance 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 improper calibration of 1TIC10541 prevented the 1A DG SR ventilation system from fulfilling its design function and caused reasonable doubt whether the 1A DG could fulfill its safety function. The inspectors determined that the finding was of very low safety significance because the issue was a design or qualification deficiency confirmed not to result in loss of operability or availability of the 1A DG. This finding has a cross-cutting aspect in the area of human performance,

work practices, because Constellation did not ensure that personnel do not proceed in the face of uncertainty or unexpected circumstances (H.4.a of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Functionality Review of 0C Diesel Degraded Condition.
The inspectors identified a finding of very low safety significance because Constellation did not conduct an adequate functionality review following failure of the 0C DG (the station blackout (SBO) diesel) battery charger. Specifically, Constellation did not take into account the Appendix R mission time in the functionality review. As a result, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger out-of-service (OOS). Immediate corrective actions included entering this issue in the CAP and providing instructions to operators to declare the 0C diesel not available anytime its associated battery charger is taken OOS. Additional corrective actions planned include changing OI-26A, “125 Volt Direct Current (VDC) System,” to reflect that the battery charger is required to support the 0C diesel functionality.

The finding is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger OOS. The inspectors determined that the finding is of very low safety significance because it only affected the ability to reach and maintain cold shutdown conditions. The finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure complete, accurate, and up-to-date procedures (OI-26A) were available and adequate to assure nuclear safety (H.2.c of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Apr 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Degraded Conditions Associated with CO-8 Relays and Implement Timely and Effective Action to Correct the Condition Adverse to Quality.
The team identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Constellation did not thoroughly evaluate and correct a degraded condition of a CO-8 relay disc sticking or binding issues which can adversely impact the function of the EDGs and the electrical distribution protection scheme. Specifically, following the February 18, 2010 event, Constellation did not identify and adequately evaluate the recent CO-8 relay failures due to sticking or binding of the induction discs in the safety related and non-safety related applications. Constellation entered this issue into the corrective action pprogram (CR 20100004673).

The finding is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone, and it adversely affected the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance safety function. The cause of the finding is related to the crosscutting area of Problem Identification and Resoluton, Corrective Action Program aspect P.1(c) because Constellation did not thoroughly evaluate the previous station operating experience of CO-8 relay induction disc sticking and binding issues such that resolutions addressed the causes and extent-of-condition.
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failed to Establish Adequate Procedures for Letdown Restoration

A self-revealing NCV of Technical Specification (TS) 5.4.1.a, "Procedures" was identified for failure to establish adequate procedures for restoration of Chemical and Volume Control System (CVCS) letdown flow. On February 18, 2010, an electrical ground fault caused a Unit 1 reactor trip, loss of the 500 kV Red Bus, and CVCS letdown isolation as expected on the ensuring instrument bus 1Y10 electrical transient. Deficient operating instructions prevented timely restoration of letdown flow following the initial transient. Pressurizer level remained above the range specified in Emergency Operating Procedure (EOP)-1 for an extended period because of the operators' inability to restore letdown. This ultimately led to exceeding the TS high limit for pressurizer level. CVCS Operating Instruction OI-2A was subsequently revised, providing necessary guidance for re-opening the letdown system excess flow check valve to restore letdown flow. This event was entered into the licensee's correction action program (CR 2010-001378).

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of a safety function of a system or a single train greater than its TS allowed outage time, and did not screen as potentially risk significant due to external events. This finding has a crosscutting aspect in the area of human performance resources aspect H.2(c), because Constellation did not ensure that procedures for restoring CVCS letdown were complete and accurate.
Inspection Report# : 2010006 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely Declaration of Notice of Unusual Event
The inspectors identified an NCV of 10 CFR Part 50.47(b)(4) for the failure to implement the emergency classification and action level scheme in a timely manner during an actual event due to the complete loss of communications to one off-site agency. Specifically, on July 4, 2010, phone communications to St. Mary's County were lost and conditions requiring declaration of a Notice of Unusual Event (NOUE) were met. However, Constellation did not declare the NOUE in a timely manner. Shortly after Constellation determined that conditions met the declaration criteria for an NOUE, the phone system was restored. Constellation entered this issue into their corrective action program (CAP) for resolution. Immediate corrective action included establishing a standing order to provide operators guidance in the event of a loss of communications.

The finding is greater than minor because it is associated with the Emergency Preparedness (EP) cornerstone attribute of emergency response organization performance (actual event response) and it adversely affects the cornerstone objective to ensure that Constellation was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the finding is of very low safety significance in that it was associated with an actual event where the operators failed to declare an NOUE in a timely manner during a complete loss of communications to one off-site agency. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not make a safety significant decision using a systematic process to declare the NOUE in a timely manner. Specifically, Constellation did not use a systematic process such as a standing order or procedure to provide guidance to operators to address a loss of communications. In addition, Constellation did not adequately implement emergency response organization's (ERO) roles and authorities as designed to obtain interdisciplinary input on safety significance decisions such as event classification (H.1.a of IMC 0310).

Inspection Report# : 2010004 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Procedures to Calibrate and Maintain Ventilaton and Radiation Effluent Monitoring Equipment.
The inspectors identified a finding of very low safety significance associated with a non-cited violation (NCV) of Technical Specification 5.4.1.a, "Procedures," involving Constellation's failure to implement procedures to calibrate and maintain ventilation and radiation effluent monitoring equipment. Specifically, on December 9, 2010, refurbishment of the steam generator (SG) nozzle dams and manway stud tensioners was in progress in the material processing facility; at that time, only one exhaust train of the ventilation system was in operation and a negative pressure of approximately one-half inch of water was not being maintained. Immediate corrective actions included stopping all work in the building and completing the necessary repairs before restarting activities.

The finding was more than minor because the failure to maintain the ventilation and radiation monitoring equipment affects the Radiation Protection cornerstone to ensure 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 determined that the finding is of very low safety significance because it did not impair Constellation's ability to assess dose. Constellation did assess dose and the limits of 10 CFR 50 Appendix I and 10 CFR 20.1301(e) were not exceeded. The finding also has a cross-cutting aspect in the area of problem identification and resolution, Corrective Action, because appropriate corrective actions were not taken in a timely manner. The exhaust fan was out-of-service (OOS) for eight months, the supply fan was OOS for seven years, and the radiation monitor was OOS for most of four years (P.1.d or IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 07, 2011

Calvert Cliffs 1
2Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Testing of PORVs in Accordance with ASME OM Code
The inspectors identified a very low safety significance (Green) non-cited violation (NCV) of Technical Specification (TS) 5.5.8, Inservice Testing Program, involving Constellation's failure to perform inservice tests (ISTs) for the pressurizer power operated relief valves (PORVs) in accordance with American Society of Mechanical Engineers Operation and Maintenance (ASME OM) Code. Constellation entered this issue into its corrective action program and the PORVs are now tested during plant heat up coming out of an outage.
Inspection Report# : 2010005 *(pdf)*
Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged SR Cables
The inspectors identified an non cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," because Constellation did not establish and take adequate measures for conditions adverse to quality associated with submerged safety related (SR) cables including the 1A diesel generator (DG) cables. As a result, SR cables were subjected to a submerged environment for unknown or extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination for the 1A DG, and increasing the frequency of manhole inspections. Long-term corrective actions (C/As) planned include evaluating the need for sump pumps and including all SR manholes in the preventive maintenance routine.

The finding is more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance 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, repeated submergence of medium voltage cables can cause excessive aging and degradation in the exposed sections of cable, which could significantly shorten its qualified life and cause unexpected failures. The inspectors determined that the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. This finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not implement and institutionalize OE through changes to station processes and procedures associated with submerged cables (P.2.b of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Written Procedures During Calibration of the 1A DG SR Ventilation Temperature Controller

A self-revealing finding of very low safety significance was identified because Constellation did not follow written procedures during the calibration of 1TIC10541 temperature controller. Specifically, the incorrect calibration of the 1TIC10541 temperature controller created a low air flow condition within portions of the SR ventilation system for the 1A DG and could challenge the safety function of the 1A DG. Immediate corrective action included declaring the 1A DG inoperable until 1TIC10541 was correctly calibrated and tested, and conducting a prompt investigation into the incorrect calibration of 1TIC1041.

This finding is more than minor because it was associated with the Mitigating System cornerstone attribute of human performance 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 improper calibration of 1TIC10541 prevented the 1A DG SR ventilation system from fulfilling its design function and caused reasonable doubt whether the 1A DG could fulfill its safety function. The inspectors determined that the finding was of very low safety significance because the issue was a design or qualification deficiency confirmed not to result in loss of operability or availability of the 1A DG. This finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel do not proceed in the face of uncertainty or unexpected circumstances (H.4.a of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Functionality Review of 0C Diesel Degraded Condition.
The inspectors identified a finding of very low safety significance because Constellation did not conduct an adequate functionality review following failure of the 0C DG (the station blackout (SBO) diesel) battery charger. Specifically, Constellation did not take into account the Appendix R mission time in the functionality review. As a result, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger out-of-service (OOS). Immediate corrective actions included entering this issue in the CAP and providing instructions to operators to declare the 0C diesel not available anytime its associated battery charger is taken OOS. Additional corrective actions planned include changing OI-26A, “125 Volt Direct Current (VDC) System,” to reflect that the battery charger is required to support the 0C diesel functionality.

The finding is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger OOS. The inspectors determined that the finding is of very low safety significance because it only affected the ability to reach and maintain cold shutdown conditions. The finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure complete, accurate, and up-to-date procedures (OI-26A) were available and adequate to assure nuclear safety (H.2.c of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation

Untimely Declaration of Notice of Unusual Event
The inspectors identified an NCV of 10 CFR Part 50.47(b)(4) for the failure to implement the emergency classification and action level scheme in a timely manner during an actual event due to the complete loss of communications to one off-site agency. Specifically, on July 4, 2010, phone communications to St. Mary's County were lost and conditions requiring declaration of a Notice of Unusual Event (NOUE) were met. However, Constellation did not declare the NOUE in a timely manner. Shortly after Constellation determined that conditions met the declaration criteria for an NOUE, the phone system was restored. Constellation entered this issue into their corrective action program (CAP) for resolution. Immediate corrective action included establishing a standing order to provide operators guidance in the event of a loss of communications.

The finding is greater than minor because it is associated with the Emergency Preparedness (EP) cornerstone attribute of emergency response organization performance (actual event response) and it adversely affects the cornerstone objective to ensure that Constellation was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the finding is of very low safety significance in that it was associated with an actual event where the operators failed to declare an NOUE in a timely manner during a complete loss of communications to one off-site agency. This finding has a cross-cutting aspect in the area of human performance, decision making, because Constellation did not make a safety significant decision using a systematic process to declare the NOUE in a timely manner. Specifically, Constellation did not use a systematic process such as a standing order or procedure to provide guidance to operators to address a loss of communications. In addition, Constellation did not adequately implement emergency response organization's (ERO) roles and authorities as designed to obtain interdisciplinary input on safety significance decisions such as event classification (H.1.a of IMC 0310).

Inspection Report# : 2010004 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Procedures to Calibrate and Maintain Ventilaton and Radiation Effluent Monitoring Equipment.
The inspectors identified a finding of very low safety significance associated with a non-cited violation (NCV) of Technical Specification 5.4.1.a, "Procedures," involving Constellation's failure to implement procedures to calibrate and maintain ventilation and radiation effluent monitoring equipment. Specifically, on December 9, 2010, refurbishment of the steam generator (SG) nozzle dams and manway stud tensioners was in progress in the material processing facility; at that time, only one exhaust train of the ventilation system was in operation and a negative pressure of approximately one-half inch of water was not being maintained. Immediate corrective actions included stopping all work in the building and completing the necessary repairs before restarting activities.

The finding was more than minor because the failure to maintain the ventilation and radiation monitoring equipment affects the Radiation Protection cornerstone to ensure 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 determined that the finding is of very low safety significance because it did not impair Constellation's ability to assess dose. Constellation did assess dose and the limits of 10 CFR 50 Appendix I and 10 CFR 20.1301(e) were not exceeded. The finding also has a cross-cutting aspect in the area of problem identification and resolution, Corrective Action, because appropriate corrective actions were not taken in a timely manner. The exhaust fan was out-of-service (OOS) for eight months, the supply fan was OOS for seven years, and the radiation monitor was OOS for most of four years (P.1.d or IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : October 14, 2011

Calvert Cliffs 1
3Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Testing of PORVs in Accordance with ASME OM Code
The inspectors identified a very low safety significance (Green) non-cited violation (NCV) of Technical Specification (TS) 5.5.8, Inservice Testing Program, involving Constellation's failure to perform inservice tests (ISTs) for the pressurizer power operated relief valves (PORVs) in accordance with American Society of Mechanical Engineers Operation and Maintenance (ASME OM) Code. Constellation entered this issue into its corrective action program and the PORVs are now tested during plant heat up coming out of an outage.
Inspection Report# : 2010005 *(pdf)*
Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged SR Cables
The inspectors identified an non cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," because Constellation did not establish and take adequate measures for conditions adverse to quality associated with submerged safety related (SR) cables including the 1A diesel generator (DG) cables. As a result, SR cables were subjected to a submerged environment for unknown or extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination for the 1A DG, and increasing the frequency of manhole inspections. Long-term corrective actions (C/As) planned include evaluating the need for sump pumps and including all SR manholes in the preventive maintenance routine.

The finding is more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance 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, repeated submergence of medium voltage cables can cause excessive aging and degradation in the exposed sections of cable, which could significantly shorten its qualified life and cause unexpected failures. The inspectors determined that the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. This finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not implement and institutionalize OE through changes to station processes and procedures associated with submerged cables (P.2.b of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Written Procedures During Calibration of the 1A DG SR Ventilation Temperature Controller

A self-revealing finding of very low safety significance was identified because Constellation did not follow written procedures during the calibration of 1TIC10541 temperature controller. Specifically, the incorrect calibration of the 1TIC10541 temperature controller created a low air flow condition within portions of the SR ventilation system for the 1A DG and could challenge the safety function of the 1A DG. Immediate corrective action included declaring the 1A DG inoperable until 1TIC10541 was correctly calibrated and tested, and conducting a prompt investigation into the incorrect calibration of 1TIC1041.

This finding is more than minor because it was associated with the Mitigating System cornerstone attribute of human performance 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 improper calibration of 1TIC10541 prevented the 1A DG SR ventilation system from fulfilling its design function and caused reasonable doubt whether the 1A DG could fulfill its safety function. The inspectors determined that the finding was of very low safety significance because the issue was a design or qualification deficiency confirmed not to result in loss of operability or availability of the 1A DG. This finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel do not proceed in the face of uncertainty or unexpected circumstances (H.4.a of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Functionality Review of 0C Diesel Degraded Condition.
The inspectors identified a finding of very low safety significance because Constellation did not conduct an adequate functionality review following failure of the 0C DG (the station blackout (SBO) diesel) battery charger. Specifically, Constellation did not take into account the Appendix R mission time in the functionality review. As a result, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger out-of-service (OOS). Immediate corrective actions included entering this issue in the CAP and providing instructions to operators to declare the 0C diesel not available anytime its associated battery charger is taken OOS. Additional corrective actions planned include changing OI-26A, “125 Volt Direct Current (VDC) System,” to reflect that the battery charger is required to support the 0C diesel functionality.

The finding is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Constellation did not recognize that the 0C diesel was not available for its Appendix R function with its associated battery charger OOS. The inspectors determined that the finding is of very low safety significance because it only affected the ability to reach and maintain cold shutdown conditions. The finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure complete, accurate, and up-to-date procedures (OI-26A) were available and adequate to assure nuclear safety (H.2.c of IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Procedures to Calibrate and Maintain Ventilaton and Radiation Effluent Monitoring Equipment.
The inspectors identified a finding of very low safety significance associated with a non-cited violation (NCV) of Technical Specification 5.4.1.a, "Procedures," involving Constellation's failure to implement procedures to calibrate and maintain ventilation and radiation effluent monitoring equipment. Specifically, on December 9, 2010, refurbishment of the steam generator (SG) nozzle dams and manway stud tensioners was in progress in the material processing facility; at that time, only one exhaust train of the ventilation system was in operation and a negative pressure of approximately one-half inch of water was not being maintained. Immediate corrective actions included stopping all work in the building and completing the necessary repairs before restarting activities.

The finding was more than minor because the failure to maintain the ventilation and radiation monitoring equipment affects the Radiation Protection cornerstone to ensure 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 determined that the finding is of very low safety significance because it did not impair Constellation's ability to assess dose. Constellation did assess dose and the limits of 10 CFR 50 Appendix I and 10 CFR 20.1301(e) were not exceeded. The finding also has a cross-cutting aspect in the area of problem identification and resolution, Corrective Action, because appropriate corrective actions were not taken in a timely manner. The exhaust fan was out-of-service (OOS) for eight months, the supply fan was OOS for seven years, and the radiation monitor was OOS for most of four years (P.1.d or IMC 0310).

Inspection Report# : 2010005 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : January 04, 2012

Calvert Cliffs 1
4Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Turbine Building Siding Failure Below Design Specification
Green: A self-revealing finding of very low safety significance was identified because Constellation did not ensure the turbine building (TB) siding was installed in accordance with design requirements of ES-005, Civil and Structural Design Criteria. This resulted in wind induced TB siding failures significantly below design wind speeds. Consequently, Unit 1 experienced an automatic trip from 100 percent power due to a phase-to-phase short circuit on the main transformer when the main transformer high voltage lines were struck by dislodged TB siding caused by high winds associated with Hurricane lrene. The inspectors determined that Constellation missed multiple opportunities to identify the TB siding installation deficiencies following several high wind events and through the use of operating experience (OE). lmmediate corrective actions included entering this issue into their CAP and restricting personnel travel in outside areas with sustained wind speed greater than 40 mph until the TB corner siding on all corners has been verified to be properly installed. Other corrective actions include testing and inspection of the main transformer, repairs to the 'B' and 'C' phase high line drops to the main transformer, temporary repairs to the TB siding, and development of new installation requirements which meet the design requiiements of the TB siding corners. In addition, Constellation's planned corrective actions include inspecting all building siding inside the protective area to identify other possible deficiencies.

The finding is more than minor because it is associated with the protection against external factors attiibute (wind and grid stability) of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the finding resulted in a reactor trip of Unit 1. The inspectors determined that the finding is of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, OE, because Constellation did not use OE information and internally generated lessons learned, to support plant safety and implement changes to station processes, procedures, equipment, and training programs. Specifically, Constellation did not implement and institutionalize OE associated with siding failures through changes to station processes, procedures, and equipment, and training programs (P.2.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Adequately Prescribe and Implement Procedures Associated with Protected Equipment

Green: A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion V, "lnstructions, Procedures, and Drawings," was identified, because Constellation did not prescribe and accomplish procedures appropriate to the circumstances associated with protected safety related equipment. As a result, on October 3,2011, Constellation allowed work on a protected emergency diesel generator (EDG). The work activity inadvertently resulted in the protected EDG becoming inoperable. This led to required Technical Specification (TS) shutdowns of Unit 1 and Unit 2 because the other required EDG was already out of service (OOS) for planned maintenance. Prior to the shutdown being completed, the protected EDG was restored to an operable status and the shutdowns were aborted. lmmediate corrective actions included entering this issue into their corrective action program (CAP), issuing a site wide communication stating the expectations regarding work on protected safety equipment, and revising the Operations Administrative Policy (OAP) associated with protected equipment.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the work activity impacted the availability and capability of the 1A EDG. The inspectors determined 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 for greater than its individual TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, decision making, because the Constellation did not adequately make a risk significant decision using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. Specifically, Constellation personnel did not follow the integrated work management process for emergent work which uttimately led to the downpower of both units (H.1.a per IMC 0310). (Section 1R04)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Annual Operating Tests Are Not Comprehensive
Green: The inspectors identified an NCV of 10 CFR Part 55.59(aX2Xii) for Constellation's failure to adrninister annual operating tests to licensed operators to accomplish a comprehensive sample of items specified by 10 CFR Part 55.45(a)(7)&(8). Specifically, for the past five years, Constellation's annual operating tests have not evaluated licensed operators on important tasks that would be performed inside the auxiliary building. Constellation entered this issue into their CAP to evaluate corrective actions.

This finding is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. This finding is associated with human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to iniiiating events to prevent undesirable consequences. Specifically, Constellation's annual operating tests have not evaluated licensed operators on mitigation tasks that would be performed inside the auxiliary building. The finding is of very low safety significance according to IMC 0609, "SDP," Appendix l, "Licensed Operator Requalification SDP," because the issue was related to operating test quality. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance, decision making, because Constellation did not use conservative assumptions in decision making that resulted in the development and administration of annual operating tests over the past five years that were not comprehensive (H.1.b per IMC 0310). (Section 1R11)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Inspection of Floor Drains Led to Clogging and EDG Failure During Hurricane
Green: The inspectors identified an NCV of TS 5.4.1, "Procedures," because Constellation did not adequately implement the procedural requirements to conduct floor drain inspections. Specifically, operators did not ensure that floor drains were free to drain and clear of debris in the 80 foot elevation of the 1A EDG building. This contributed to the inoperability of the 1A EDG due to clogged floor drains during Hurricane lrene on August 28, 2011. Additional causes included the failure of a combustion intake penetration boot seal to remain leak tight and the installation of drain filters without an engineering evaluation. lmmediate corrective actions included entering this issue into their CAP, removing all the drain filters from the 1A EDG building, and installation of a curb around the combustion intake penetration. Planned corrective actions include replacing combustion intake penetration boot seal.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating System cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance deiiciency resulted in the 1A EDG becoming inoperable. A phase 3 SDP was required because the finding was potentially risk significant due to a seismic, flooding, or severe weather initiating event. A Region I Senior Reactor Analyst (SRA) conducted a Phase 3 assessment and concluded that the finding was of very low safety significance. The finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel work practices support human performance by defining and effectively communicating expectations regarding procedural compliance and personnel following procedures related to floor drain inspections (H.4.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables
Green: The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Actions,” because Constellation did not promptly identify and correct a condition adverse to quality associated with submerged saltwater (SW) pump motor safety-related medium voltage cables. As a result, safety-related cables were subjected to a submerged or continuously wetted environment for extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination (OD), and placing these cables into Constellation’s Medium Voltage Cable Program.
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 capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, this condition could lead to cable degradation, increased likelihood of cable failure, and subsequent risk associated with the failure of safety-related equipment. The inspectors determined the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not fully implement and institutionalized OE to change station processes and procedures associated with submerged cables (P.2.b per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Testing of PORVs in Accordance with ASME OM Code
Green. The inspectors identified a very low safety significance (Green) non-cited violation (NCV) of Technical Specification (TS) 5.5.8, Inservice Testing Program, involving Constellation?s failure to perform inservice tests (ISTs) for the pressurizer power operated relief valves (PORVs) in accordance with American Society of Mechanical Engineers Operation and Maintenance (ASME OM) Code. Constellation entered this issue into its corrective action program and the PORVs are now tested during plant heat up coming out of an outage.

The finding is more than minor because it affected the procedure quality aspect of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, during the 2009 Unit 2 refueling outage one of the pressurizer PORVs closed in 2.7 seconds, failing to meet the 2.0 second acceptance criteria and resulted in the valve being declared inoperable. The inspectors concluded it is reasonable that a problem during the valve?s transport, storage or installation affected the valve?s operability and the slow closure time would have been identified if tested during plant startup in 2007. Although the valve was degraded during the operating cycle, Constellation concluded it remained functional in that it would have closed if demanded. Testing methods in place precluded any repair, retesting or engineering evaluation because the slow closure time was not discovered until after the operating cycle. The inspectors evaluated this finding using IMC 0609 Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” Table 4a. The inspectors determined that the finding is of very low safety significance (Green) because the condition was not a design or qualification deficiency, did not involve an actual loss of safety function 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. This finding does not have a cross-cutting aspect associated with it since the test practice was established in 2004 and is not reflective of current performance.
Inspection Report# : 2010005 *(pdf)*
Inspection Report# : 2011002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Compensatory Actions for Out of Service High Range Effluent Radiation Monitors
Green. The inspectors identified an NCV of 10 CFR Part 50.54, “Conditions of Licenses,” paragraph (q), because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation periodically removed the high range effluent monitors from service without addressing the impact on the site’s ability to make a timely assessment of radiological releases as discussed in the Emergency Plan. This could result in an unnecessary delay in dose projection for certain radiological events. Immediate corrective actions included entering this issue into the CAP, updating the evaluation to address any potential delays, and protecting equipment required for dose

projection.

The finding is more than minor because it is associated with the facilities and equipment attribute of the Emergency Preparedness (EP) cornerstone and affected the cornerstone's objective to ensure that the licensee is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency. Specifically, the removal of high range effluent radiation monitors from service that provide a timely assessment capability may result in not immediately recognizing the offsite radiological condition that requires offsite protective actions. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) function. In addition, the finding is similar to examples of Green findings in IMC 0609, Appendix B, Section 4.9, in that the equipment or systems necessary for dose projection are not functional for longer than 24 hours from time of discovery without adequate compensatory measures. This finding has a cross-cutting aspect in the area of problem identification and resolution, CAP, because Constellation did not fully evaluate problems such that the resolution address causes and extent of condition as necessary. Specifically, Constellation did not adequately evaluate the compensatory actions following the removal of the high range effluent monitors from service to ensure that a timely assessment of offsite radiological conditions could be accomplished following a steam generator tube rupture (SGTR) event (P.1.c per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Lack of Proficiency Evaluating Seismic Recorder Data
Green. A self-revealing NCV of 10 CFR Part 50.54, "Conditions of Licenses," paragraph (q), was identified because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation did not have an adequate emergency classification and action level scheme in place for the seismic activity initiating condition and Constellation personnel lacked the proficiency necessary to evaluate seismic recorder data in a timely manner during the seismic event on August 23, 2011. The licensee entered this issue into their CAP and implemented compensatory actions, which included training of operators.

The finding is more than minor because it is associated with the facilities and equipment attribute of the EP cornerstone and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, incorrect seismic recorder trigger setpoint settings and untimely evaluations of seismic recorder data could result in the failure of Constellation to declare an Unusual Event (UE) or an Alert in a timely manner. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded RSPS function. The finding is also similar to examples of Green findings in Section 4.4 of IMC 0609, Appendix B, in that the EAL classification process would not declare any Alert or Notification of UE that should be declared. This finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure that the training of personnel was adequate to assure nuclear safety. Specifically, Constellation did not ensure that personnel were proficiently trained to read and evaluate the seismic recorder data which could delay entry into the EALs (H.2.b of IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 18, 2011
Identified By: NRC
Item Type: FIN Finding
Calvert Cliffs Biennial PI&R Inspection Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and in general, prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2011010 *(pdf)*

Last modified : March 02, 2012

Calvert Cliffs 1
1Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Turbine Building Siding Failure Below Design Specification
Green: A self-revealing finding of very low safety significance was identified because Constellation did not ensure the turbine building (TB) siding was installed in accordance with design requirements of ES-005, Civil and Structural Design Criteria. This resulted in wind induced TB siding failures significantly below design wind speeds. Consequently, Unit 1 experienced an automatic trip from 100 percent power due to a phase-to-phase short circuit on the main transformer when the main transformer high voltage lines were struck by dislodged TB siding caused by high winds associated with Hurricane lrene. The inspectors determined that Constellation missed multiple opportunities to identify the TB siding installation deficiencies following several high wind events and through the use of operating experience (OE). lmmediate corrective actions included entering this issue into their CAP and restricting personnel travel in outside areas with sustained wind speed greater than 40 mph until the TB corner siding on all corners has been verified to be properly installed. Other corrective actions include testing and inspection of the main transformer, repairs to the 'B' and 'C' phase high line drops to the main transformer, temporary repairs to the TB siding, and development of new installation requirements which meet the design requiiements of the TB siding corners. In addition, Constellation's planned corrective actions include inspecting all building siding inside the protective area to identify other possible deficiencies.

The finding is more than minor because it is associated with the protection against external factors attiibute (wind and grid stability) of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the finding resulted in a reactor trip of Unit 1. The inspectors determined that the finding is of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, OE, because Constellation did not use OE information and internally generated lessons learned, to support plant safety and implement changes to station processes, procedures, equipment, and training programs. Specifically, Constellation did not implement and institutionalize OE associated with siding failures through changes to station processes, procedures, and equipment, and training programs (P.2.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Adequately Prescribe and Implement Procedures Associated with Protected Equipment

Green: A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion V, "lnstructions, Procedures, and Drawings," was identified, because Constellation did not prescribe and accomplish procedures appropriate to the circumstances associated with protected safety related equipment. As a result, on October 3,2011, Constellation allowed work on a protected emergency diesel generator (EDG). The work activity inadvertently resulted in the protected EDG becoming inoperable. This led to required Technical Specification (TS) shutdowns of Unit 1 and Unit 2 because the other required EDG was already out of service (OOS) for planned maintenance. Prior to the shutdown being completed, the protected EDG was restored to an operable status and the shutdowns were aborted. lmmediate corrective actions included entering this issue into their corrective action program (CAP), issuing a site wide communication stating the expectations regarding work on protected safety equipment, and revising the Operations Administrative Policy (OAP) associated with protected equipment.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the work activity impacted the availability and capability of the 1A EDG. The inspectors determined 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 for greater than its individual TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, decision making, because the Constellation did not adequately make a risk significant decision using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. Specifically, Constellation personnel did not follow the integrated work management process for emergent work which uttimately led to the downpower of both units (H.1.a per IMC 0310). (Section 1R04)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Annual Operating Tests Are Not Comprehensive
Green: The inspectors identified an NCV of 10 CFR Part 55.59(aX2Xii) for Constellation's failure to adrninister annual operating tests to licensed operators to accomplish a comprehensive sample of items specified by 10 CFR Part 55.45(a)(7)&(8). Specifically, for the past five years, Constellation's annual operating tests have not evaluated licensed operators on important tasks that would be performed inside the auxiliary building. Constellation entered this issue into their CAP to evaluate corrective actions.

This finding is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. This finding is associated with human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to iniiiating events to prevent undesirable consequences. Specifically, Constellation's annual operating tests have not evaluated licensed operators on mitigation tasks that would be performed inside the auxiliary building. The finding is of very low safety significance according to IMC 0609, "SDP," Appendix l, "Licensed Operator Requalification SDP," because the issue was related to operating test quality. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance, decision making, because Constellation did not use conservative assumptions in decision making that resulted in the development and administration of annual operating tests over the past five years that were not comprehensive (H.1.b per IMC 0310). (Section 1R11)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Inspection of Floor Drains Led to Clogging and EDG Failure During Hurricane
Green: The inspectors identified an NCV of TS 5.4.1, "Procedures," because Constellation did not adequately implement the procedural requirements to conduct floor drain inspections. Specifically, operators did not ensure that floor drains were free to drain and clear of debris in the 80 foot elevation of the 1A EDG building. This contributed to the inoperability of the 1A EDG due to clogged floor drains during Hurricane lrene on August 28, 2011. Additional causes included the failure of a combustion intake penetration boot seal to remain leak tight and the installation of drain filters without an engineering evaluation. lmmediate corrective actions included entering this issue into their CAP, removing all the drain filters from the 1A EDG building, and installation of a curb around the combustion intake penetration. Planned corrective actions include replacing combustion intake penetration boot seal.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating System cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance deiiciency resulted in the 1A EDG becoming inoperable. A phase 3 SDP was required because the finding was potentially risk significant due to a seismic, flooding, or severe weather initiating event. A Region I Senior Reactor Analyst (SRA) conducted a Phase 3 assessment and concluded that the finding was of very low safety significance. The finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel work practices support human performance by defining and effectively communicating expectations regarding procedural compliance and personnel following procedures related to floor drain inspections (H.4.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables
Green: The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Actions,” because Constellation did not promptly identify and correct a condition adverse to quality associated with submerged saltwater (SW) pump motor safety-related medium voltage cables. As a result, safety-related cables were subjected to a submerged or continuously wetted environment for extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination (OD), and placing these cables into Constellation’s Medium Voltage Cable Program.
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 capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, this condition could lead to cable degradation, increased likelihood of cable failure, and subsequent risk associated with the failure of safety-related equipment. The inspectors determined the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not fully implement and institutionalized OE to change station processes and procedures associated with submerged cables (P.2.b per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Compensatory Actions for Out of Service High Range Effluent Radiation Monitors
Green. The inspectors identified an NCV of 10 CFR Part 50.54, "Conditions of Licenses," paragraph (q), because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation periodically removed the high range effluent monitors from service without addressing the impact on the site's ability to make a timely assessment of radiological releases as discussed in the Emergency Plan. This could result in an unnecessary delay in dose projection for certain radiological events. Immediate corrective actions included entering this issue into the CAP, updating the evaluation to address any potential delays, and protecting equipment required for dose projection.

The finding is more than minor because it is associated with the facilities and equipment attribute of the Emergency Preparedness (EP) cornerstone and affected the cornerstone's objective to ensure that the licensee is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency. Specifically, the removal of high range effluent radiation monitors from service that provide a timely assessment capability may result in not immediately recognizing the offsite radiological condition that requires offsite protective actions. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) function. In addition, the finding is similar to examples of Green findings in IMC 0609, Appendix B, Section 4.9, in that the equipment or systems necessary for dose projection are not functional for longer than 24 hours from time of discovery without adequate compensatory measures. This finding has a cross-cutting aspect in the area of problem identification and resolution, CAP, because Constellation did not fully evaluate problems such that the resolution address causes and extent of condition as necessary. Specifically, Constellation did not adequately evaluate the compensatory actions following the removal of the high range effluent monitors from service to ensure that a timely assessment of offsite radiological conditions could be accomplished following a steam generator tube rupture (SGTR) event (P.1.c per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Lack of Proficiency Evaluating Seismic Recorder Data
Green. A self-revealing NCV of 10 CFR Part 50.54, "Conditions of Licenses," paragraph (q), was identified because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation did not have an adequate emergency classification and action level scheme in place for the seismic activity initiating condition and Constellation personnel lacked the proficiency necessary to evaluate seismic recorder data in a timely manner during the seismic event on August 23, 2011. The licensee entered this issue into their CAP and implemented compensatory actions, which included training of operators.

The finding is more than minor because it is associated with the facilities and equipment attribute of the EP cornerstone and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, incorrect seismic recorder trigger setpoint settings and untimely evaluations of seismic recorder data could result in the failure of Constellation to declare an Unusual Event (UE) or an Alert in a timely manner. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded RSPS function. The finding is also similar to examples of Green findings in Section 4.4 of IMC 0609, Appendix B, in that the EAL classification process would not declare any Alert or Notification of UE that should be declared. This finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure that the training of personnel was adequate to assure nuclear safety. Specifically, Constellation did not ensure that personnel were proficiently trained to read and evaluate the seismic recorder data which could delay entry into the EALs (H.2.b of IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 18, 2011
Identified By: NRC
Item Type: FIN Finding
Calvert Cliffs Biennial PI&R Inspection Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and in general, prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities,

and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2011010 *(pdf)*

Last modified : May 29, 2012

Calvert Cliffs 1
2Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Turbine Building Siding Failure Below Design Specification
Green: A self-revealing finding of very low safety significance was identified because Constellation did not ensure the turbine building (TB) siding was installed in accordance with design requirements of ES-005, Civil and Structural Design Criteria. This resulted in wind induced TB siding failures significantly below design wind speeds. Consequently, Unit 1 experienced an automatic trip from 100 percent power due to a phase-to-phase short circuit on the main transformer when the main transformer high voltage lines were struck by dislodged TB siding caused by high winds associated with Hurricane lrene. The inspectors determined that Constellation missed multiple opportunities to identify the TB siding installation deficiencies following several high wind events and through the use of operating experience (OE). lmmediate corrective actions included entering this issue into their CAP and restricting personnel travel in outside areas with sustained wind speed greater than 40 mph until the TB corner siding on all corners has been verified to be properly installed. Other corrective actions include testing and inspection of the main transformer, repairs to the 'B' and 'C' phase high line drops to the main transformer, temporary repairs to the TB siding, and development of new installation requirements which meet the design requiiements of the TB siding corners. In addition, Constellation's planned corrective actions include inspecting all building siding inside the protective area to identify other possible deficiencies.

The finding is more than minor because it is associated with the protection against external factors attiibute (wind and grid stability) of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the finding resulted in a reactor trip of Unit 1. The inspectors determined that the finding is of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, OE, because Constellation did not use OE information and internally generated lessons learned, to support plant safety and implement changes to station processes, procedures, equipment, and training programs. Specifically, Constellation did not implement and institutionalize OE associated with siding failures through changes to station processes, procedures, and equipment, and training programs (P.2.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Mitigating Systems

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 them 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.
Inspection Report# : 2012007 *(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 Evaluation of Components that Could be Damaged by Tornado Missiles
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 their design with respect to missile protection of safety-related equipment required for safe shutdown of the plant during and after a tornado. Specifically, the team identified vulnerable tornado missile targets (turbine-driven auxiliary feedwater and main steam safety valve steam exhaust pipes, and salt water pump motor ventilation fan housings) that had not been included in Constellation's aggregate PRA evaluation used to meet licensing requirements. Following the identification of these components, Constellation entered the issue into their corrective action program; and re-performed the aggregate PRA tornado evaluation and concluded that the results remained within their licensing basis.
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: NRC
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)*

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Adequately Prescribe and Implement Procedures Associated with Protected Equipment
Green: A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion V, "lnstructions, Procedures, and Drawings," was identified, because Constellation did not prescribe and accomplish procedures appropriate to the circumstances associated with protected safety related equipment. As a result, on October 3,2011, Constellation allowed work on a protected emergency diesel generator (EDG). The work activity inadvertently resulted in the protected EDG becoming inoperable. This led to required Technical Specification (TS) shutdowns of Unit 1 and Unit 2 because the other required EDG was already out of service

(OOS) for planned maintenance. Prior to the shutdown being completed, the protected EDG was restored to an operable status and the shutdowns were aborted. lmmediate corrective actions included entering this issue into their corrective action program (CAP), issuing a site wide communication stating the expectations regarding work on protected safety equipment, and revising the Operations Administrative Policy (OAP) associated with protected equipment.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the work activity impacted the availability and capability of the 1A EDG. The inspectors determined 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 for greater than its individual TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, decision making, because the Constellation did not adequately make a risk significant decision using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. Specifically, Constellation personnel did not follow the integrated work management process for emergent work which uttimately led to the downpower of both units (H.1.a per IMC 0310). (Section 1R04)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Annual Operating Tests Are Not Comprehensive
Green: The inspectors identified an NCV of 10 CFR Part 55.59(aX2Xii) for Constellation's failure to adrninister annual operating tests to licensed operators to accomplish a comprehensive sample of items specified by 10 CFR Part 55.45(a)(7)&(8). Specifically, for the past five years, Constellation's annual operating tests have not evaluated licensed operators on important tasks that would be performed inside the auxiliary building. Constellation entered this issue into their CAP to evaluate corrective actions.

This finding is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. This finding is associated with human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to iniiiating events to prevent undesirable consequences. Specifically, Constellation's annual operating tests have not evaluated licensed operators on mitigation tasks that would be performed inside the auxiliary building. The finding is of very low safety significance according to IMC 0609, "SDP," Appendix l, "Licensed Operator Requalification SDP," because the issue was related to operating test quality. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance, decision making, because Constellation did not use conservative assumptions in decision making that resulted in the development and administration of annual operating tests over the past five years that were not comprehensive (H.1.b per IMC 0310). (Section 1R11)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Inspection of Floor Drains Led to Clogging and EDG Failure During Hurricane
Green: The inspectors identified an NCV of TS 5.4.1, "Procedures," because Constellation

did not adequately implement the procedural requirements to conduct floor drain inspections. Specifically, operators did not ensure that floor drains were free to drain and clear of debris in the 80 foot elevation of the 1A EDG building. This contributed to the inoperability of the 1A EDG due to clogged floor drains during Hurricane lrene on August 28, 2011. Additional causes included the failure of a combustion intake penetration boot seal to remain leak tight and the installation of drain filters without an engineering evaluation. lmmediate corrective actions included entering this issue into their CAP, removing all the drain filters from the 1A EDG building, and installation of a curb around the combustion intake penetration. Planned corrective actions include replacing combustion intake penetration boot seal.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating System cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance deiiciency resulted in the 1A EDG becoming inoperable. A phase 3 SDP was required because the finding was potentially risk significant due to a seismic, flooding, or severe weather initiating event. A Region I Senior Reactor Analyst (SRA) conducted a Phase 3 assessment and concluded that the finding was of very low safety significance. The finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel work practices support human performance by defining and effectively communicating expectations regarding procedural compliance and personnel following procedures related to floor drain inspections (H.4.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables
Green: The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Actions,” because Constellation did not promptly identify and correct a condition adverse to quality associated with submerged saltwater (SW) pump motor safety-related medium voltage cables. As a result, safety-related cables were subjected to a submerged or continuously wetted environment for extended periods. Immediate corrective action included entering this issue into their corrective action program (CAP), conducting an operability determination (OD), and placing these cables into Constellation’s Medium Voltage Cable Program.
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 capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, this condition could lead to cable degradation, increased likelihood of cable failure, and subsequent risk associated with the failure of safety-related equipment. The inspectors determined the finding is of very low safety significance because the finding is a design or qualification deficiency confirmed not to result in a loss of operability. The finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience (OE), because Constellation did not fully implement and institutionalized OE to change station processes and procedures associated with submerged cables (P.2.b per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Compensatory Actions for Out of Service High Range Effluent Radiation Monitors
Green. The inspectors identified an NCV of 10 CFR Part 50.54, "Conditions of Licenses," paragraph (q), because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation periodically removed the high range effluent monitors from service without addressing the impact on the site's ability to make a timely assessment of radiological releases as discussed in the Emergency Plan. This could result in an unnecessary delay in dose projection for certain radiological events. Immediate corrective actions included entering this issue into the CAP, updating the evaluation to address any potential delays, and protecting equipment required for dose projection.

The finding is more than minor because it is associated with the facilities and equipment attribute of the Emergency Preparedness (EP) cornerstone and affected the cornerstone's objective to ensure that the licensee is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency. Specifically, the removal of high range effluent radiation monitors from service that provide a timely assessment capability may result in not immediately recognizing the offsite radiological condition that requires offsite protective actions. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded Risk-Significant Planning Standard (RSPS) function. In addition, the finding is similar to examples of Green findings in IMC 0609, Appendix B, Section 4.9, in that the equipment or systems necessary for dose projection are not functional for longer than 24 hours from time of discovery without adequate compensatory measures. This finding has a cross-cutting aspect in the area of problem identification and resolution, CAP, because Constellation did not fully evaluate problems such that the resolution address causes and extent of condition as necessary. Specifically, Constellation did not adequately evaluate the compensatory actions following the removal of the high range effluent monitors from service to ensure that a timely assessment of offsite radiological conditions could be accomplished following a steam generator tube rupture (SGTR) event (P.1.c per IMC 0310).
Inspection Report# : 2011004 *(pdf)*

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Lack of Proficiency Evaluating Seismic Recorder Data
Green. A self-revealing NCV of 10 CFR Part 50.54, "Conditions of Licenses," paragraph (q), was identified because Constellation did not maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation did not have an adequate emergency classification and action level scheme in place for the seismic activity initiating condition and Constellation personnel lacked the proficiency necessary to evaluate seismic recorder data in a timely manner during the seismic event on August 23, 2011. The licensee entered this issue into their CAP and implemented compensatory actions, which included training of operators.

The finding is more than minor because it is associated with the facilities and equipment attribute of the EP cornerstone and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of

the public in the event of a radiological emergency. Specifically, incorrect seismic recorder trigger setpoint settings and untimely evaluations of seismic recorder data could result in the failure of Constellation to declare an Unusual Event (UE) or an Alert in a timely manner. The inspectors determined the finding is of very low safety significance because it did not result in a loss or degraded RSPS function. The finding is also similar to examples of Green findings in Section 4.4 of IMC 0609, Appendix B, in that the EAL classification process would not declare any Alert or Notification of UE that should be declared. This finding has a cross-cutting aspect in the area of human performance, resources, because Constellation did not ensure that the training of personnel was adequate to assure nuclear safety. Specifically, Constellation did not ensure that personnel were proficiently trained to read and evaluate the seismic recorder data which could delay entry into the EALs (H.2.b of IMC 0310).
Inspection Report# : 2011004 *(pdf)*

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 Nov 18, 2011
Identified By: NRC
Item Type: FIN Finding
Calvert Cliffs Biennial PI&R Inspection Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and in general, prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities,

and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2011010 *(pdf)*

Last modified : September 12, 2012

Calvert Cliffs 1
3Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 1 RCS Pressure Boundary Leakage
A self-revealing NCV of Technical Specification (TS) 3.4.13, "Reactor Coolant System (RCS) operational LEAKAGE," was identified because Constellation failed to completely isolate a fault in the RCS pressure boundary, which resulted in Constellation operating with RCS pressure boundary leakage for a period of time prohibited by Technical Specifications. Constellation's corrective actions included enter the issue in their CAP (CR-2012-007012 and CR-2012-007276), performing repairs, and conducting root and apparent cause analyses for the issue.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, after the Constellation personnel identified RCPB leakage at 5:15 p.m. on July 17, 2012, they failed to reach Mode 3 within six hours because all available means to verify proper RCS leak isolation were not used. Constellation's actions did not limit the likelihood of a small loss of coolant accident (LOCA) event when they operated with RCS pressure boundary leakage from July 17 until July 21, 2012. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small LOCA and could not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function.

The finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Constellation personnel did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, after attempting to isolate the RCS pressure boundary leakage, Constellation personnel non-conservatively assumed that the leak was going to be isolated, as demonstrated by non-rigorous post-isolation verification criterion and the lack of a robust monitoring plan in the ensuing days after the valves were shut.
Inspection Report# : 2012004 *(pdf)*

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Turbine Building Siding Failure Below Design Specification
Green: A self-revealing finding of very low safety significance was identified because Constellation did not ensure the turbine building (TB) siding was installed in accordance with design requirements of ES-005, Civil and Structural Design Criteria. This resulted in wind induced TB siding failures significantly below design wind speeds. Consequently, Unit 1 experienced an automatic trip from 100 percent power due to a phase-to-phase short circuit on the main transformer when the main transformer high voltage lines were struck by

dislodged TB siding caused by high winds associated with Hurricane lrene. The inspectors determined that Constellation missed multiple opportunities to identify the TB siding installation deficiencies following several high wind events and through the use of operating experience (OE). lmmediate corrective actions included entering this issue into their CAP and restricting personnel travel in outside areas with sustained wind speed greater than 40 mph until the TB corner siding on all corners has been verified to be properly installed. Other corrective actions include testing and inspection of the main transformer, repairs to the 'B' and 'C' phase high line drops to the main transformer, temporary repairs to the TB siding, and development of new installation requirements which meet the design requiiements of the TB siding corners. In addition, Constellation's planned corrective actions include inspecting all building siding inside the protective area to identify other possible deficiencies.

The finding is more than minor because it is associated with the protection against external factors attiibute (wind and grid stability) of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the finding resulted in a reactor trip of Unit 1. The inspectors determined that the finding is of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of problem identification and resolution, OE, because Constellation did not use OE information and internally generated lessons learned, to support plant safety and implement changes to station processes, procedures, equipment, and training programs. Specifically, Constellation did not implement and institutionalize OE associated with siding failures through changes to station processes, procedures, and equipment, and training programs (P.2.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(pdf)*

Mitigating Systems

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 them 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.
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: NRC
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)*

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Did Not Adequately Prescribe and Implement Procedures Associated with Protected Equipment
Green: A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion V, "lnstructions, Procedures, and Drawings," was identified, because Constellation did not prescribe and accomplish procedures appropriate to the circumstances associated with protected safety related equipment. As a result, on October 3,2011, Constellation allowed work on a protected emergency diesel generator (EDG). The work activity inadvertently resulted in the protected EDG becoming inoperable. This led to required Technical Specification (TS) shutdowns of Unit 1 and Unit 2 because the other required EDG was already out of service (OOS) for planned maintenance. Prior to the shutdown being completed, the protected EDG was restored to an operable status and the shutdowns were aborted. lmmediate corrective actions included entering this issue into their corrective action program (CAP), issuing a site wide communication stating the expectations regarding work on protected safety equipment, and revising the Operations Administrative Policy (OAP) associated with protected equipment.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the work activity impacted the availability and capability of the 1A EDG. The inspectors determined 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 for greater than its individual TS allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, decision making, because the Constellation did not adequately make a risk significant decision using a systematic process when faced with uncertain or unexpected plant conditions, to ensure safety is maintained. Specifically, Constellation personnel did not follow the integrated work management process for emergent work which

uttimately led to the downpower of both units (H.1.a per IMC 0310). (Section 1R04)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Annual Operating Tests Are Not Comprehensive
Green: The inspectors identified an NCV of 10 CFR Part 55.59(aX2Xii) for Constellation's failure to adrninister annual operating tests to licensed operators to accomplish a comprehensive sample of items specified by 10 CFR Part 55.45(a)(7)&(8). Specifically, for the past five years, Constellation's annual operating tests have not evaluated licensed operators on important tasks that would be performed inside the auxiliary building. Constellation entered this issue into their CAP to evaluate corrective actions.

This finding is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. This finding is associated with human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to iniiiating events to prevent undesirable consequences. Specifically, Constellation's annual operating tests have not evaluated licensed operators on mitigation tasks that would be performed inside the auxiliary building. The finding is of very low safety significance according to IMC 0609, "SDP," Appendix l, "Licensed Operator Requalification SDP," because the issue was related to operating test quality. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance, decision making, because Constellation did not use conservative assumptions in decision making that resulted in the development and administration of annual operating tests over the past five years that were not comprehensive (H.1.b per IMC 0310). (Section 1R11)
Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Inspection of Floor Drains Led to Clogging and EDG Failure During Hurricane
Green: The inspectors identified an NCV of TS 5.4.1, "Procedures," because Constellation did not adequately implement the procedural requirements to conduct floor drain inspections. Specifically, operators did not ensure that floor drains were free to drain and clear of debris in the 80 foot elevation of the 1A EDG building. This contributed to the inoperability of the 1A EDG due to clogged floor drains during Hurricane lrene on August 28, 2011. Additional causes included the failure of a combustion intake penetration boot seal to remain leak tight and the installation of drain filters without an engineering evaluation. lmmediate corrective actions included entering this issue into their CAP, removing all the drain filters from the 1A EDG building, and installation of a curb around the combustion intake penetration. Planned corrective actions include replacing combustion intake penetration boot seal.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating System cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance

deiiciency resulted in the 1A EDG becoming inoperable. A phase 3 SDP was required because the finding was potentially risk significant due to a seismic, flooding, or severe weather initiating event. A Region I Senior Reactor Analyst (SRA) conducted a Phase 3 assessment and concluded that the finding was of very low safety significance. The finding has a cross-cutting aspect in the area of human performance, work practices, because Constellation did not ensure that personnel work practices support human performance by defining and effectively communicating expectations regarding procedural compliance and personnel following procedures related to floor drain inspections (H.4.b per IMC 0310). (Section 4OA3)
Inspection Report# : 2011005 *(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)*

Significance: N/A Nov 18, 2011
Identified By: NRC
Item Type: FIN Finding
Calvert Cliffs Biennial PI&R Inspection Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and in general, prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2011010 *(pdf)*

Last modified : November 30, 2012

Calvert Cliffs 1
4Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Work Package Led to Reactor Coolant System Pressure Boundary Leakage
Draft. A self-revealing NCV of technical specification (TS) 3.4.13, "Reactor Coolant System (RCS) Operational LEAKAGE," was identified because Constellation failed to restore the RCS to as-designed configuration following replacement of the 11A reactor coolant pump (RCP) differential pressure transmitter isolation valve in 1998, which resulted in operating with RCS pressure boundary leakage which is prohibited by TS. Specifically, a design required vertical support was missing on the RCP high pressure differential transmitter tubing which created a high cyclic fatigue vulnerability, eventual weld failure at the tube to pipe adapter, and RCS pressure boundary leakage. RCS pressure boundary leakage was first identified in June 2012 due to an increasing trend in RCS leak rate while the plant was operating at power. Immediate corrective actions included entering this issue into the corrective action program (CAP), replacing the tube to pipe adapter, and installing the missing vertical tubing support. Planned corrective actions include establishing a small bore piping inspection program and conducting walkdowns of Unit 1 and Unit 2 RCP differential pressure transmitter sensing lines and similar sensing lines in other systems.

The finding is more than minor because it is associated with the design control attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to restore the system to as-designed configuration resulted in a RCS pressure boundary leak. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) and could not likely affect other systems used to mitigate a LOCA, resulting in a total loss of their function.

The finding does not have a cross-cutting aspect since the failure to restore the as-designed configuration is not indicative of current licensee performance. Constellation's current work order planning procedure requires the planner to translate engineering design documents into maintenance work orders while maintaining the design basis of the plant per the configuration program.

Inspection Report# : 2012005 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 1 RCS Pressure Boundary Leakage
A self-revealing NCV of Technical Specification (TS) 3.4.13, "Reactor Coolant System (RCS) operational LEAKAGE," was identified because Constellation failed to completely isolate a fault in the RCS pressure boundary, which resulted in Constellation operating with RCS pressure boundary leakage for a period of time prohibited by Technical Specifications. Constellation's corrective actions included enter the issue in their CAP (CR-2012-007012 and CR-2012-007276), performing repairs, and conducting root and apparent cause analyses for the issue.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, after the

Constellation personnel identified RCPB leakage at 5:15 p.m. on July 17, 2012, they failed to reach Mode 3 within six hours because all available means to verify proper RCS leak isolation were not used. Constellation's actions did not limit the likelihood of a small loss of coolant accident (LOCA) event when they operated with RCS pressure boundary leakage from July 17 until July 21, 2012. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small LOCA and could not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function.

The finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Constellation personnel did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, after attempting to isolate the RCS pressure boundary leakage, Constellation personnel non-conservatively assumed that the leak was going to be isolated, as demonstrated by non-rigorous post-isolation verification criterion and the lack of a robust monitoring plan in the ensuing days after the valves were shut.
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

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 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:  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

Calvert Cliffs 1
1Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Work Package Led to Reactor Coolant System Pressure Boundary Leakage
Draft. A self-revealing NCV of technical specification (TS) 3.4.13, "Reactor Coolant System (RCS) Operational LEAKAGE," was identified because Constellation failed to restore the RCS to as-designed configuration following replacement of the 11A reactor coolant pump (RCP) differential pressure transmitter isolation valve in 1998, which resulted in operating with RCS pressure boundary leakage which is prohibited by TS. Specifically, a design required vertical support was missing on the RCP high pressure differential transmitter tubing which created a high cyclic fatigue vulnerability, eventual weld failure at the tube to pipe adapter, and RCS pressure boundary leakage. RCS pressure boundary leakage was first identified in June 2012 due to an increasing trend in RCS leak rate while the plant was operating at power. Immediate corrective actions included entering this issue into the corrective action program (CAP), replacing the tube to pipe adapter, and installing the missing vertical tubing support. Planned corrective actions include establishing a small bore piping inspection program and conducting walkdowns of Unit 1 and Unit 2 RCP differential pressure transmitter sensing lines and similar sensing lines in other systems.

The finding is more than minor because it is associated with the design control attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to restore the system to as-designed configuration resulted in a RCS pressure boundary leak. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) and could not likely affect other systems used to mitigate a LOCA, resulting in a total loss of their function.

The finding does not have a cross-cutting aspect since the failure to restore the as-designed configuration is not indicative of current licensee performance. Constellation's current work order planning procedure requires the planner to translate engineering design documents into maintenance work orders while maintaining the design basis of the plant per the configuration program.

Inspection Report# : 2012005 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 1 RCS Pressure Boundary Leakage
A self-revealing NCV of Technical Specification (TS) 3.4.13, "Reactor Coolant System (RCS) operational LEAKAGE," was identified because Constellation failed to completely isolate a fault in the RCS pressure boundary, which resulted in Constellation operating with RCS pressure boundary leakage for a period of time prohibited by

Technical Specifications. Constellation's corrective actions included enter the issue in their CAP (CR-2012-007012 and CR-2012-007276), performing repairs, and conducting root and apparent cause analyses for the issue.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, after the Constellation personnel identified RCPB leakage at 5:15 p.m. on July 17, 2012, they failed to reach Mode 3 within six hours because all available means to verify proper RCS leak isolation were not used. Constellation's actions did not limit the likelihood of a small loss of coolant accident (LOCA) event when they operated with RCS pressure boundary leakage from July 17 until July 21, 2012. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small LOCA and could not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function.

The finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Constellation personnel did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, after attempting to isolate the RCS pressure boundary leakage, Constellation personnel non-conservatively assumed that the leak was going to be isolated, as demonstrated by non-rigorous post-isolation verification criterion and the lack of a robust monitoring plan in the ensuing days after the valves were shut.
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

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 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)*

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)*

Significance: N/A Apr 03, 2012
Identified By: NRC
Item Type: VIO Violation
CENG failed to provide complete and accurate information about the transfer of control of the licenses
Based on the information developed during an NRC investigation (Office of Investigations Report No. 1-2010-037) and the information that you subsequently provided during the conference, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it were discussed with you, and described in our April 3, 2012 letter (ADAMS Accession No. ML12089A097). It is our conclusion that CENG failed to provide complete and accurate information about the transfer of control of the licenses in accordance with paragraph 50.9(a) of Title 10 of the Code of Federal Regulations (10 CFR) when it amended the Operating

Agreement but did not inform the NRC.
Inspection Report# : 2012008 *(pdf)*

Last modified : June 04, 2013

Calvert Cliffs 1
2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Work Package Led to Reactor Coolant System Pressure Boundary Leakage
Draft. A self-revealing NCV of technical specification (TS) 3.4.13, "Reactor Coolant System (RCS) Operational LEAKAGE," was identified because Constellation failed to restore the RCS to as-designed configuration following replacement of the 11A reactor coolant pump (RCP) differential pressure transmitter isolation valve in 1998, which resulted in operating with RCS pressure boundary leakage which is prohibited by TS. Specifically, a design required vertical support was missing on the RCP high pressure differential transmitter tubing which created a high cyclic fatigue vulnerability, eventual weld failure at the tube to pipe adapter, and RCS pressure boundary leakage. RCS pressure boundary leakage was first identified in June 2012 due to an increasing trend in RCS leak rate while the plant was operating at power. Immediate corrective actions included entering this issue into the corrective action program (CAP), replacing the tube to pipe adapter, and installing the missing vertical tubing support. Planned corrective actions include establishing a small bore piping inspection program and conducting walkdowns of Unit 1 and Unit 2 RCP differential pressure transmitter sensing lines and similar sensing lines in other systems.

The finding is more than minor because it is associated with the design control attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to restore the system to as-designed configuration resulted in a RCS pressure boundary leak. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) and could not likely affect other systems used to mitigate a LOCA, resulting in a total loss of their function.

The finding does not have a cross-cutting aspect since the failure to restore the as-designed configuration is not indicative of current licensee performance. Constellation's current work order planning procedure requires the planner to translate engineering design documents into maintenance work orders while maintaining the design basis of the plant per the configuration program.

Inspection Report# : 2012005 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 1 RCS Pressure Boundary Leakage
A self-revealing NCV of Technical Specification (TS) 3.4.13, "Reactor Coolant System (RCS) operational LEAKAGE," was identified because Constellation failed to completely isolate a fault in the RCS pressure boundary, which resulted in Constellation operating with RCS pressure boundary leakage for a period of time prohibited by

Technical Specifications. Constellation's corrective actions included enter the issue in their CAP (CR-2012-007012 and CR-2012-007276), performing repairs, and conducting root and apparent cause analyses for the issue.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, after the Constellation personnel identified RCPB leakage at 5:15 p.m. on July 17, 2012, they failed to reach Mode 3 within six hours because all available means to verify proper RCS leak isolation were not used. Constellation's actions did not limit the likelihood of a small loss of coolant accident (LOCA) event when they operated with RCS pressure boundary leakage from July 17 until July 21, 2012. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small LOCA and could not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function.

The finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Constellation personnel did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, after attempting to isolate the RCS pressure boundary leakage, Constellation personnel non-conservatively assumed that the leak was going to be isolated, as demonstrated by non-rigorous post-isolation verification criterion and the lack of a robust monitoring plan in the ensuing days after the valves were shut.
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish a Test Program for DFO Check Valves
• Green: The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG failed to establish a test program to ensure that diesel fuel oil (DFO) transfer system header check valves, DFO-146 and DFO-148, would perform their safety function. Specifically, on November 1, 2012, the inspectors identified that DFO-146 and DFO-148 had never been tested in the reverse flow direction or inspected. DFO-146 and DFO-148 have a design function to close in reverse flow conditions to ensure that the Tornado/Missile protected No. 21 fuel oil storage tank (FOST) will not drain if the non-Tornado/Missile protected No. 11 FOST fails during a tornado/missile event. CENG's immediate corrective actions included entering this issue into their corrective action program (CAP) and performing a reasonable expectation of continued operability. Planned corrective actions include performing an evaluation which includes a probabilistic risk assessment to credit a non tornado/missile protected manual valve located in the DFO unloading station and a tornado/missile protected manual valve in the No. 21 FOST building to perform the function of the DFO tornado/missile protected check valves.

This finding is more than minor because it is associated with the protection against external factors 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, a reasonable doubt of operability existed because the capability of the check valves to perform their design function had never been demonstrated. The failure of check valves during a tornado/missile event causing the loss of the No. 11 FOST would

result in the draining of the safety-related No. 21 FOST and consequential loss of all Fairbanks Morse emergency diesel generators (EDGs). Also, this issue is similar to IMC 0612, Appendix E, Example 3.i, in that, if credit is taken for manual valves in lieu of testing the check valves, additional analysis would be required to be performed to assure licensing basis requirements are met. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because CENG failed to ensure that issues potentially impacting nuclear safety are promptly identified and fully evaluated and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, CENG did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with inadequate testing programs of risk significant equipment. [P.1(d)] (Section 1R04)

Inspection Report# : 2013003 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Adequate Design Control Measures for Diesel Fuel Oil Cloud Point
Green: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Constellation failed to provide design control measures to assure appropriate specifications were translated into procedures for diesel fuel oil (DFO) in the No.11 fuel oil storage tank (FOST). Specifically, Constellation's cloud point maximum specification for DFO is above historical minimum temperatures recorded in the vicinity of CCNPP. The inspectors determined that Constellation did not have adequate measures in place such as a calculation, temperature monitoring, and/or procedures to assess the operability of the DFO transfer system from the No. 11 FOST for sustained outdoor temperatures below the cloud point specification temperature but above the minimum expected temperature the site may experience. Constellation entered this issue in their corrective action program (CAP). Immediate corrective actions included adding a note in Operations turnover sheet to determine No.11 FOST DFO operability if ambient temperatures dropped below 10°F at the site. Planned corrective actions include performing a calculation to determine cold weather effects on the No.11 FOST.

This finding is more than minor because it is associated with the protection against external factors attribute of the Mitigating Systems 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, a reasonable doubt of operability existed because the minimum temperature limits and duration of low temperature had not been established for diesel generator operability and historical low temperatures have been below the cloud point of the DFO. If left uncorrected, the performance deficiency has the potential to lead to a more significant safety concern because an inadequate cloud point specification could impact emergency diesel generator (EDG) and/or station blackout (SBO) diesel operation during an actual event during extreme low temperature conditions. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding is a deficiency affecting the design or qualification of a mitigating structure, system, and component (SSC); however, the SSC maintained its 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. Specifically, the most reasonable opportunity to identify this issue was in 1994 when Constellation reviewed this issue in response to Information Notice (IN) 94-19, "Emergency Diesel Generator Vulnerability to Failure from Cold Fuel Oil." (Section 1R04)

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Technical Specification Surveillance Testing of the Diesel Fuel Oil Transfer System
Green: The inspectors identified an NCV of Technical Specification (TS) surveillance requirement (SR) 3.8.1.7 because Constellation failed to adequately perform SR associated with the DFO transfer system. Specifically, since approximately 1996, Constellation did not test the 2A EDG fuel oil transfer system aligned to the No. 21 FOST. The No. 21 FOST is the credited tank in the plant's licensing bases. Immediate corrective actions included entering this issue into the CAP and entering TS SR 3.0.3 for a missed surveillance which required performing a probabilistic risk assessment and performing the missed surveillance within 31 days. Corrective actions planned includes revising the quarterly EDG surveillance procedure to test the 2A EDG while aligned to the No. 21 FOST and develop and implement a testing program to periodically test each EDG aligned to the normal and alternate FOSTs.

This finding is more than minor because it is associated with the equipment performance 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, Constellation's testing program did not provide assurance that no obstruction exists in the DFO transfer system. If left uncorrected, this issue potentially would result in a greater safety concern in that an obstruction could exist would not be identified until an actual event requiring the 2A EDG to be aligned to the No. 21 FOST as described in the safety analysis. In accordance with IMC 0609.04, "Initial Characterization of Findings" and Exhibit 2 of IMC 0609, Appendix A, "Significance Determination Process For Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time; and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety significance. The inspectors determined that 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 are promptly identified, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, Constellation did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with previously identified inadequate testing programs of risk significant equipment [P.1(d)] (Section 1R22)

Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Steam Generator Tube Rupture Emergency Operating Procedure
Green: The inspectors identified an NCV of Technical Specification 5.4.1.b, "Procedures," because CENG failed to maintain guidance in Emergency Operating Procedure (EOP)-6, "Steam Generator Tube Rupture (SGTR)." Specifically, EOP-6 guidance does not provide an alternative action to cool down the reactor coolant system (RCS) for a SGTR event with a loss of offsite power (LOOP) and the single failure of the unaffected steam generator (SG)

atmospheric dump valve (ADV). This could result in the inability to terminate the primary to secondary leak into the affected SG and the cycling of the affected SG ADV to control the SG level resulting in additional dose to the public. Immediate corrective actions included entering this issue into their CAP. Corrective actions planned include revising EOP-6 to address the identified deficiency. In addition, CENG established interim administrative controls of the ADVs to ensure that appropriate remedial actions are taken if the ADVs are out of service and is evaluating adding the ADVs to their technical specifications.

This finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, RCS, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency could result in the operation of the affected SG ADV and, consequently, the release of radioactivity to the environment until an adequate method to cool down the RCS is established. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding does not represent an actual open pathway in the physical integrity of reactor containment. Also, the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG did not ensure that EOP-6 was complete, accurate, and up-to-date through required periodic reviews. [H.2(c)] (Section 1R04)

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: 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 : September 03, 2013

Calvert Cliffs 1
3Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Work Package Led to Reactor Coolant System Pressure Boundary Leakage
Draft. A self-revealing NCV of technical specification (TS) 3.4.13, "Reactor Coolant System (RCS) Operational LEAKAGE," was identified because Constellation failed to restore the RCS to as-designed configuration following replacement of the 11A reactor coolant pump (RCP) differential pressure transmitter isolation valve in 1998, which resulted in operating with RCS pressure boundary leakage which is prohibited by TS. Specifically, a design required vertical support was missing on the RCP high pressure differential transmitter tubing which created a high cyclic fatigue vulnerability, eventual weld failure at the tube to pipe adapter, and RCS pressure boundary leakage. RCS pressure boundary leakage was first identified in June 2012 due to an increasing trend in RCS leak rate while the plant was operating at power. Immediate corrective actions included entering this issue into the corrective action program (CAP), replacing the tube to pipe adapter, and installing the missing vertical tubing support. Planned corrective actions include establishing a small bore piping inspection program and conducting walkdowns of Unit 1 and Unit 2 RCP differential pressure transmitter sensing lines and similar sensing lines in other systems.

The finding is more than minor because it is associated with the design control attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to restore the system to as-designed configuration resulted in a RCS pressure boundary leak. The inspectors evaluated the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," and determined the finding is of very low safety significance (Green) because the performance deficiency, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) and could not likely affect other systems used to mitigate a LOCA, resulting in a total loss of their function.

The finding does not have a cross-cutting aspect since the failure to restore the as-designed configuration is not indicative of current licensee performance. Constellation's current work order planning procedure requires the planner to translate engineering design documents into maintenance work orders while maintaining the design basis of the plant per the configuration program.

Inspection Report# : 2012005 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Establish a Test Program for DFO Check Valves
• Green: The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG failed to establish a test program to ensure that diesel fuel oil (DFO) transfer system header check valves, DFO-146 and DFO-148, would perform their safety function. Specifically, on November 1, 2012, the inspectors identified that DFO-146 and DFO-148 had never been tested in the reverse flow direction or inspected. DFO-146 and DFO-148 have a design function to close in reverse flow conditions to ensure that the Tornado/Missile protected No. 21 fuel oil storage tank (FOST) will not drain if the non-Tornado/Missile protected No. 11 FOST fails during a tornado/missile event. CENG's immediate corrective actions included entering this issue into their corrective action program (CAP) and performing a reasonable expectation of continued operability. Planned corrective actions include performing an evaluation which includes a probabilistic risk assessment to credit a non tornado/missile protected manual valve located in the DFO unloading station and a tornado/missile protected manual valve in the No. 21 FOST building to perform the function of the DFO tornado/missile protected check valves.

This finding is more than minor because it is associated with the protection against external factors 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, a reasonable doubt of operability existed because the capability of the check valves to perform their design function had never been demonstrated. The failure of check valves during a tornado/missile event causing the loss of the No. 11 FOST would result in the draining of the safety-related No. 21 FOST and consequential loss of all Fairbanks Morse emergency diesel generators (EDGs). Also, this issue is similar to IMC 0612, Appendix E, Example 3.i, in that, if credit is taken for manual valves in lieu of testing the check valves, additional analysis would be required to be performed to assure licensing basis requirements are met. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because CENG failed to ensure that issues potentially impacting nuclear safety are promptly identified and fully evaluated and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, CENG did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with inadequate testing programs of risk significant equipment. [P.1(d)] (Section 1R04)

Inspection Report# : 2013003 *(pdf)*

Significance:  Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Adequate Design Control Measures for Diesel Fuel Oil Cloud Point
Green: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Constellation failed to provide design control measures to assure appropriate specifications were translated into procedures for diesel fuel oil (DFO) in the No.11 fuel oil storage tank (FOST). Specifically, Constellation's cloud point maximum specification for DFO is above historical minimum temperatures recorded in the vicinity of CCNPP. The inspectors determined that Constellation did not have adequate measures in place such as a calculation, temperature monitoring, and/or procedures to assess the operability of the DFO transfer system from the No. 11 FOST for sustained outdoor temperatures below the cloud point specification temperature but above the minimum expected temperature the site may experience. Constellation entered this issue in their corrective action program (CAP). Immediate corrective actions included adding a note in Operations turnover sheet to determine No.11 FOST DFO operability if ambient temperatures dropped below 10°F at the site. Planned corrective actions include performing a calculation to determine cold weather effects on the No.11 FOST.

This finding is more than minor because it is associated with the protection against external factors attribute of the Mitigating Systems 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, a reasonable doubt of operability existed because the minimum temperature limits and duration of low temperature had not been established for diesel generator operability and historical low temperatures have been below the cloud point of the DFO. If left uncorrected, the performance deficiency has the potential to lead to a more significant safety concern because an inadequate cloud point specification could impact emergency diesel generator (EDG) and/or station blackout (SBO) diesel operation during an actual event during extreme low temperature conditions. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding is a deficiency affecting the design or qualification of a mitigating structure, system, and component (SSC); however, the SSC maintained its 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. Specifically, the most reasonable opportunity to identify this issue was in 1994 when Constellation reviewed this issue in response to Information Notice (IN) 94-19, "Emergency Diesel Generator Vulnerability to Failure from Cold Fuel Oil." (Section 1R04)

Inspection Report# : 2013002 *(pdf)*

Significance:  Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Technical Specification Surveillance Testing of the Diesel Fuel Oil Transfer System
Green: The inspectors identified an NCV of Technical Specification (TS) surveillance requirement (SR) 3.8.1.7 because Constellation failed to adequately perform SR associated with the DFO transfer system. Specifically, since approximately 1996, Constellation did not test the 2A EDG fuel oil transfer system aligned to the No. 21 FOST. The No. 21 FOST is the credited tank in the plant's licensing bases. Immediate corrective actions included entering this issue into the CAP and entering TS SR 3.0.3 for a missed surveillance which required performing a probabilistic risk assessment and performing the missed surveillance within 31 days. Corrective actions planned includes revising the quarterly EDG surveillance procedure to test the 2A EDG while aligned to the No. 21 FOST and develop and implement a testing program to periodically test each EDG aligned to the normal and alternate FOSTs.

This finding is more than minor because it is associated with the equipment performance 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, Constellation's testing program did not provide assurance that no obstruction exists in the DFO transfer system. If left uncorrected, this issue potentially would result in a greater safety concern in that an obstruction could exist would not be identified until an actual event requiring the 2A EDG to be aligned to the No. 21 FOST as described in the safety analysis. In accordance with IMC 0609.04, "Initial Characterization of Findings" and Exhibit 2 of IMC 0609, Appendix A, "Significance Determination Process For Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time; and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety significance. The inspectors determined that 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 are promptly identified, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, Constellation did not take appropriate corrective actions to address safety issues and adverse trends in a

timely manner associated with previously identified inadequate testing programs of risk significant equipment [P.1(d)] (Section 1R22)

Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Steam Generator Tube Rupture Emergency Operating Procedure
Green: The inspectors identified an NCV of Technical Specification 5.4.1.b, "Procedures," because CENG failed to maintain guidance in Emergency Operating Procedure (EOP)-6, "Steam Generator Tube Rupture (SGTR)." Specifically, EOP-6 guidance does not provide an alternative action to cool down the reactor coolant system (RCS) for a SGTR event with a loss of offsite power (LOOP) and the single failure of the unaffected steam generator (SG) atmospheric dump valve (ADV). This could result in the inability to terminate the primary to secondary leak into the affected SG and the cycling of the affected SG ADV to control the SG level resulting in additional dose to the public. Immediate corrective actions included entering this issue into their CAP. Corrective actions planned include revising EOP-6 to address the identified deficiency. In addition, CENG established interim administrative controls of the ADVs to ensure that appropriate remedial actions are taken if the ADVs are out of service and is evaluating adding the ADVs to their technical specifications.

This finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, RCS, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency could result in the operation of the affected SG ADV and, consequently, the release of radioactivity to the environment until an adequate method to cool down the RCS is established. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding does not represent an actual open pathway in the physical integrity of reactor containment. Also, the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG did not ensure that EOP-6 was complete, accurate, and up-to-date through required periodic reviews. [H.2(c)] (Section 1R04)

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 Sep 27, 2013
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the CAP in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.
Inspection Report# : 2013008 *(pdf)*

Last modified : December 03, 2013

Calvert Cliffs 1
4Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Emergency and Abnormal Operating Procedures for the Loss of the 21 DC Bus
Green. The inspectors identified an NCV of Technical Specification (TS) 5.4.1, "Procedures," because Constellation Energy Nuclear Group (CENG) failed to maintain adequate guidance in Emergency Operating Procedure (EOP) 8, "Functional Recovery Procedure," and/or Abnormal Operating Procedure (AOP) 7J, "Loss of 120 Volt Vital Alternating Current (AC) or 125 Volt Vital Direct Current (DC) Power." Specifically, EOP 8 and/or AOP-7J did not contain adequate instructions to cross-tie the 480 volt AC vital buses to restore the 120 volt AC vital buses during a loss of offsite power (LOOP) event concurrent with a single failure of the 21 125 volt DC bus. As a result, the engineered safety features actuation system (ESFAS) and auxiliary feedwater actuation system (AFAS) would inadvertently actuate on both units if the 120 volt AC vital buses were not restored within a specified period of time. CENG staff's immediate corrective actions included entering this issue into their corrective action program (CAP). Corrective actions planned include revising AOP-7J to add in steps to cross-tie the 480 volt AC vital buses.

The finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and 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, following a LOOP concurrent with a failure of the 21 DC bus, inadvertent ESFAS and AFAS actuations would occur on both units if power is not restored to the vital 120 volt AC buses. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the inspectors determined that this was a legacy procedure issue and did not note any recent reasonable opportunities for CENG personnel to identify this issue. (Section 1R15)

Inspection Report# : 2013005 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Pre-Conditioning of Containment Air Coolers Emergency Outlet Valves
Green. The inspectors identified an NCV of Title 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG's in-service test (IST) procedures did not provide instructions to preclude

preconditioning of the containment air cooler (CAC) emergency outlet valves. Specifically, STP-O-065B-2, "21 SRW Subsystem Operability Test," was written such that a full stroke of the CAC emergency outlet valves was allowed prior to performance of the IST stroke time testing of the valves in the open direction. As a result, the 21 CAC emergency outlet valve, 2-CV-1582, was preconditioned during the last four surveillance tests performed on the valve and the 24 CAC emergency outlet valve, 2-CV-1593, was preconditioned during three of the last four surveillance tests performed on the valve. Immediate corrective actions included entering this issue in the CAP. Corrective actions included revising STP-O-065B to prevent future preconditioning of all the CAC emergency outlet valves.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, preconditioning of the CAC emergency outlet valves prior to performing IST stroke time testing could mask valve degradation. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not affect the design or qualification of a mitigating structure, system, and component (SSC), did not represent a loss of system function, did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time, and did not represent an actual loss of function of one or more non-TS trains of equipment, designated as having high safety significance in accordance with the maintenance rule program, for greater than 24 hours. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG staff failed to ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG staff did not provide a complete and accurate procedure that would preclude preconditioning of the CAC emergency outlet valves during in-service testing [H.2(c)]. (Section 1R22)

Inspection Report# : 2013005 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish a Test Program for DFO Check Valves
• Green: The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG failed to establish a test program to ensure that diesel fuel oil (DFO) transfer system header check valves, DFO-146 and DFO-148, would perform their safety function. Specifically, on November 1, 2012, the inspectors identified that DFO-146 and DFO-148 had never been tested in the reverse flow direction or inspected. DFO-146 and DFO-148 have a design function to close in reverse flow conditions to ensure that the Tornado/Missile protected No. 21 fuel oil storage tank (FOST) will not drain if the non-Tornado/Missile protected No. 11 FOST fails during a tornado/missile event. CENG's immediate corrective actions included entering this issue into their corrective action program (CAP) and performing a reasonable expectation of continued operability. Planned corrective actions include performing an evaluation which includes a probabilistic risk assessment to credit a non tornado/missile protected manual valve located in the DFO unloading station and a tornado/missile protected manual valve in the No. 21 FOST building to perform the function of the DFO tornado/missile protected check valves.

This finding is more than minor because it is associated with the protection against external factors 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, a reasonable doubt of operability existed because the capability of the check valves to perform their design function had never been demonstrated. The failure of check valves during a tornado/missile event causing the loss of the No. 11 FOST would result in the draining of the safety-related No. 21 FOST and consequential loss of all Fairbanks Morse emergency

diesel generators (EDGs). Also, this issue is similar to IMC 0612, Appendix E, Example 3.i, in that, if credit is taken for manual valves in lieu of testing the check valves, additional analysis would be required to be performed to assure licensing basis requirements are met. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because CENG failed to ensure that issues potentially impacting nuclear safety are promptly identified and fully evaluated and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, CENG did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with inadequate testing programs of risk significant equipment. [P.1(d)] (Section 1R04)

Inspection Report# : 2013003 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Adequate Design Control Measures for Diesel Fuel Oil Cloud Point
Green: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Constellation failed to provide design control measures to assure appropriate specifications were translated into procedures for diesel fuel oil (DFO) in the No.11 fuel oil storage tank (FOST). Specifically, Constellation's cloud point maximum specification for DFO is above historical minimum temperatures recorded in the vicinity of CCNPP. The inspectors determined that Constellation did not have adequate measures in place such as a calculation, temperature monitoring, and/or procedures to assess the operability of the DFO transfer system from the No. 11 FOST for sustained outdoor temperatures below the cloud point specification temperature but above the minimum expected temperature the site may experience. Constellation entered this issue in their corrective action program (CAP). Immediate corrective actions included adding a note in Operations turnover sheet to determine No.11 FOST DFO operability if ambient temperatures dropped below 10°F at the site. Planned corrective actions include performing a calculation to determine cold weather effects on the No.11 FOST.

This finding is more than minor because it is associated with the protection against external factors attribute of the Mitigating Systems 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, a reasonable doubt of operability existed because the minimum temperature limits and duration of low temperature had not been established for diesel generator operability and historical low temperatures have been below the cloud point of the DFO. If left uncorrected, the performance deficiency has the potential to lead to a more significant safety concern because an inadequate cloud point specification could impact emergency diesel generator (EDG) and/or station blackout (SBO) diesel operation during an actual event during extreme low temperature conditions. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding is a deficiency affecting the design or qualification of a mitigating structure, system, and component (SSC); however, the SSC maintained its 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. Specifically, the most reasonable opportunity to identify this issue was in 1994 when Constellation reviewed this issue in response to Information Notice (IN) 94-19, "Emergency Diesel Generator Vulnerability to Failure from Cold Fuel Oil." (Section 1R04)

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Technical Specification Surveillance Testing of the Diesel Fuel Oil Transfer System
Green: The inspectors identified an NCV of Technical Specification (TS) surveillance requirement (SR) 3.8.1.7 because Constellation failed to adequately perform SR associated with the DFO transfer system. Specifically, since approximately 1996, Constellation did not test the 2A EDG fuel oil transfer system aligned to the No. 21 FOST. The No. 21 FOST is the credited tank in the plant's licensing bases. Immediate corrective actions included entering this issue into the CAP and entering TS SR 3.0.3 for a missed surveillance which required performing a probabilistic risk assessment and performing the missed surveillance within 31 days. Corrective actions planned includes revising the quarterly EDG surveillance procedure to test the 2A EDG while aligned to the No. 21 FOST and develop and implement a testing program to periodically test each EDG aligned to the normal and alternate FOSTs.

This finding is more than minor because it is associated with the equipment performance 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, Constellation's testing program did not provide assurance that no obstruction exists in the DFO transfer system. If left uncorrected, this issue potentially would result in a greater safety concern in that an obstruction could exist would not be identified until an actual event requiring the 2A EDG to be aligned to the No. 21 FOST as described in the safety analysis. In accordance with IMC 0609.04, "Initial Characterization of Findings" and Exhibit 2 of IMC 0609, Appendix A, "Significance Determination Process For Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time; and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety significance. The inspectors determined that 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 are promptly identified, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, Constellation did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with previously identified inadequate testing programs of risk significant equipment [P.1(d)] (Section 1R22)

Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Steam Generator Tube Rupture Emergency Operating Procedure
Green: The inspectors identified an NCV of Technical Specification 5.4.1.b, "Procedures," because CENG failed to maintain guidance in Emergency Operating Procedure (EOP)-6, "Steam Generator Tube Rupture (SGTR)." Specifically, EOP-6 guidance does not provide an alternative action to cool down the reactor coolant system (RCS) for a SGTR event with a loss of offsite power (LOOP) and the single failure of the unaffected steam generator (SG) atmospheric dump valve (ADV). This could result in the inability to terminate the primary to secondary leak into the affected SG and the cycling of the affected SG ADV to control the SG level resulting in additional dose to the public. Immediate corrective actions included entering this issue into their CAP. Corrective actions planned include revising

EOP-6 to address the identified deficiency. In addition, CENG established interim administrative controls of the ADVs to ensure that appropriate remedial actions are taken if the ADVs are out of service and is evaluating adding the ADVs to their technical specifications.

This finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, RCS, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency could result in the operation of the affected SG ADV and, consequently, the release of radioactivity to the environment until an adequate method to cool down the RCS is established. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 3, "Barrier Integrity Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding does not represent an actual open pathway in the physical integrity of reactor containment. Also, the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG did not ensure that EOP-6 was complete, accurate, and up-to-date through required periodic reviews. [H.2(c)] (Section 1R04)

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 Sep 27, 2013

Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the CAP in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.
Inspection Report# : 2013008 *(pdf)*

Last modified : February 24, 2014

Calvert Cliffs 1
1Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent Loss of RCS Inventory During Lowered Inventory Conditions
Green: The inspectors identified a self-revealing NCV of Technical Specification (TS) 5.4.1, "Procedures," for the failure of Constellation Energy Nuclear Group, LLC (CENG) personnel to adequately implement procedures associated with a local leak rate test (LLRT). Specifically, CENG personnel did not isolate the letdown line in accordance with surveillance test procedure (STP)-O-108D-1, "Containment Penetration Local Leak Rate Tests," prior to draining the piping in preparation for an LLRT on chemical and volume control system (CVCS) containment isolation valves. This resulted in inadvertently draining 150 gallons from the reactor coolant system (RCS) while the reactor vessel was in a lowered inventory condition. Immediate corrective actions included entering this issue into their corrective action program (CAP), performing a prompt investigation, and conducting a safety stand-down. In addition, an apparent cause evaluation will be performed to determine any additional corrective actions.

The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events 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 failure to isolate the letdown line prior to draining resulted in the loss of 150 gallons of RCS inventory and challenged the critical safety function of inventory control while in a lowered inventory condition. Operator actions were required to identify and isolate the leak to prevent further inventory loss. The inspectors evaluated this finding using IMC 0609.04, "Initial Characterization of Findings," issued June 19, 2012, and IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," issued February 28, 2005, and determined that the issue screened to Green (very low safety significance). Specifically, the inspectors determined that adequate mitigating capability remained available and the finding did not represent a loss of control of RCS level due to less than 2 feet of inventory loss when not in midloop. As a result, a Phase 2 quantitative assessment was not required and the issue screened to Green. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Teamwork, because CENG individuals and work groups did not adequately communicate and coordinate their activities within and across organizational boundaries to ensure nuclear
safety was maintained. Specifically, a detailed shift turnover between dayshift and nightshift LLRT operators was not completed to ensure that the oncoming operators were aware of the letdown system configuration [H.4]. (Section 1R20)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Emergency and Abnormal Operating Procedures for the Loss of the 21 DC Bus
Green. The inspectors identified an NCV of Technical Specification (TS) 5.4.1, "Procedures," because Constellation Energy Nuclear Group (CENG) failed to maintain adequate guidance in Emergency Operating Procedure (EOP) 8,

"Functional Recovery Procedure," and/or Abnormal Operating Procedure (AOP) 7J, "Loss of 120 Volt Vital Alternating Current (AC) or 125 Volt Vital Direct Current (DC) Power." Specifically, EOP 8 and/or AOP-7J did not contain adequate instructions to cross-tie the 480 volt AC vital buses to restore the 120 volt AC vital buses during a loss of offsite power (LOOP) event concurrent with a single failure of the 21 125 volt DC bus. As a result, the engineered safety features actuation system (ESFAS) and auxiliary feedwater actuation system (AFAS) would inadvertently actuate on both units if the 120 volt AC vital buses were not restored within a specified period of time. CENG staff's immediate corrective actions included entering this issue into their corrective action program (CAP). Corrective actions planned include revising AOP-7J to add in steps to cross-tie the 480 volt AC vital buses.

The finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and 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, following a LOOP concurrent with a failure of the 21 DC bus, inadvertent ESFAS and AFAS actuations would occur on both units if power is not restored to the vital 120 volt AC buses. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the inspectors determined that this was a legacy procedure issue and did not note any recent reasonable opportunities for CENG personnel to identify this issue. (Section 1R15)

Inspection Report# : 2013005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
11 and 12 AFW Pumps Inoperable due to Valves Misposition
Green: The inspectors identified a self-revealing problem consisting of NCVs of TS 3.7.3, "Auxiliary Feedwater System," and TS 5.4.1, "Procedures," because CENG Operations personnel did not adhere to procedures which resulted in a valve mispositioning event that inadvertently rendered the 11 and 12 turbine driven auxiliary feedwater (AFW) pumps inoperable for approximately 12 hours, a condition prohibited by TSs. Specifically, on February 7, 2014, operators did not perform draining of 11 turbine driven AFW pump steam supply drain line as stated in Operating Instruction (OI)-32A, "Auxiliary Feedwater System," resulting in two main steam (MS) drain valves being left opened. With the drain valves open, an actual auxiliary feedwater actuation system (AFAS) signal would have resulted in steam blowing down into the room via the sump and causing room temperatures to exceed 130°F, the maximum temperature allowed in the room to protect the pump air cooled bearings. Immediate corrective actions included restoring the proper AFW system valve lineup, entering this issue into their CAP, returning the valves to their normal position on Unit 1, and ensuring that similar valves were in the correct position on Unit 2. Planned corrective actions include conducting an apparent cause evaluation to understand the apparent and contributing causes of this event and determine additional corrective actions.

The problem is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically,

Operations personnel lost configuration control of valves MS-225 and MS-228 resulting in the inoperability of the 11 and 12 AFW pumps for approximately 12 hours. The inspectors evaluated the problem using IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued June 19, 2012, and determined that the problem represented an actual loss of function of at least a single train for greater than its TS allowed outage time which required a detailed risk evaluation. The senior reactor analyst performed a detailed risk assessment utilizing the CCNPP Unit 1 simplified plant analysis risk model version 8.2.1 and determined that the problem is of very low safety significance (Green). Specifically, given a 12 hour exposure period with both turbine driven AFW pumps assumed to fail-to-run, the change in the internal events core damage frequency (CDF) was calculated to be in the high 10-8 range (Green). This problem has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because CENG personnel did not follow processes, procedures, and work instructions. Specifically, after draining the 11 AFW pump mud leg, CENG plant operators did not restore MS-225 and MS-228 to their required position as stated in procedure OI-32A [H.8]. (Section 1R15)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Pre-Conditioning of Containment Air Coolers Emergency Outlet Valves
Green. The inspectors identified an NCV of Title 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG's in-service test (IST) procedures did not provide instructions to preclude preconditioning of the containment air cooler (CAC) emergency outlet valves. Specifically, STP-O-065B-2, "21 SRW Subsystem Operability Test," was written such that a full stroke of the CAC emergency outlet valves was allowed prior to performance of the IST stroke time testing of the valves in the open direction. As a result, the 21 CAC emergency outlet valve, 2-CV-1582, was preconditioned during the last four surveillance tests performed on the valve and the 24 CAC emergency outlet valve, 2-CV-1593, was preconditioned during three of the last four surveillance tests performed on the valve. Immediate corrective actions included entering this issue in the CAP. Corrective actions included revising STP-O-065B to prevent future preconditioning of all the CAC emergency outlet valves.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, preconditioning of the CAC emergency outlet valves prior to performing IST stroke time testing could mask valve degradation. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not affect the design or qualification of a mitigating structure, system, and component (SSC), did not represent a loss of system function, did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time, and did not represent an actual loss of function of one or more non-TS trains of equipment, designated as having high safety significance in accordance with the maintenance rule program, for greater than 24 hours. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG staff failed to ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG staff did not provide a complete and accurate procedure that would preclude preconditioning of the CAC emergency outlet valves during in-service testing [H.2(c)]. (Section 1R22)

Inspection Report# : 2013005 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish a Test Program for DFO Check Valves
• Green: The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG failed to establish a test program to ensure that diesel fuel oil (DFO) transfer system header check valves, DFO-146 and DFO-148, would perform their safety function. Specifically, on November 1, 2012, the inspectors identified that DFO-146 and DFO-148 had never been tested in the reverse flow direction or inspected. DFO-146 and DFO-148 have a design function to close in reverse flow conditions to ensure that the Tornado/Missile protected No. 21 fuel oil storage tank (FOST) will not drain if the non-Tornado/Missile protected No. 11 FOST fails during a tornado/missile event. CENG's immediate corrective actions included entering this issue into their corrective action program (CAP) and performing a reasonable expectation of continued operability. Planned corrective actions include performing an evaluation which includes a probabilistic risk assessment to credit a non tornado/missile protected manual valve located in the DFO unloading station and a tornado/missile protected manual valve in the No. 21 FOST building to perform the function of the DFO tornado/missile protected check valves.

This finding is more than minor because it is associated with the protection against external factors 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, a reasonable doubt of operability existed because the capability of the check valves to perform their design function had never been demonstrated. The failure of check valves during a tornado/missile event causing the loss of the No. 11 FOST would result in the draining of the safety-related No. 21 FOST and consequential loss of all Fairbanks Morse emergency diesel generators (EDGs). Also, this issue is similar to IMC 0612, Appendix E, Example 3.i, in that, if credit is taken for manual valves in lieu of testing the check valves, additional analysis would be required to be performed to assure licensing basis requirements are met. The inspectors evaluated the significance of this finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, CAP, because CENG failed to ensure that issues potentially impacting nuclear safety are promptly identified and fully evaluated and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Specifically, CENG did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner associated with inadequate testing programs of risk significant equipment. [P.1(d)] (Section 1R04)

Inspection Report# : 2013003 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Steam Generator Tube Rupture Emergency Operating Procedure
Green: The inspectors identified an NCV of Technical Specification 5.4.1.b, "Procedures," because CENG failed to maintain guidance in Emergency Operating Procedure (EOP)-6, "Steam Generator Tube Rupture (SGTR)." Specifically, EOP-6 guidance does not provide an alternative action to cool down the reactor coolant system (RCS)

for a SGTR event with a loss of offsite power (LOOP) and the single failure of the unaffected steam generator (SG) atmospheric dump valve (ADV). This could result in the inability to terminate the primary to secondary leak into the affected SG and the cycling of the affected SG ADV to control the SG level resulting in additional dose to the public. Immediate corrective actions included entering this issue into their CAP. Corrective actions planned include revising EOP-6 to address the identified deficiency. In addition, CENG established interim administrative controls of the ADVs to ensure that appropriate remedial actions are taken if the ADVs are out of service and is evaluating adding the ADVs to their technical specifications.

This finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, RCS, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency could result in the operation of the affected SG ADV and, consequently, the release of radioactivity to the environment until an adequate method to cool down the RCS is established. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings at Power,” Exhibit 3, “Barrier Integrity Screening Questions.” The inspectors determined that this finding was of very low safety significance (Green) because the finding does not represent an actual open pathway in the physical integrity of reactor containment. Also, the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG did not ensure that EOP-6 was complete, accurate, and up-to-date through required periodic reviews. [H.2(c)] (Section 1R04)

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 Sep 27, 2013
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the CAP in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.
Inspection Report# : 2013008 *(pdf)*

Last modified : May 30, 2014

Calvert Cliffs 1
2Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent Loss of RCS Inventory During Lowered Inventory Conditions
Green: The inspectors identified a self-revealing NCV of Technical Specification (TS) 5.4.1, “Procedures,” for the failure of Constellation Energy Nuclear Group, LLC (CENG) personnel to adequately implement procedures associated with a local leak rate test (LLRT). Specifically, CENG personnel did not isolate the letdown line in accordance with surveillance test procedure (STP)-O-108D-1, “Containment Penetration Local Leak Rate Tests,” prior to draining the piping in preparation for an LLRT on chemical and volume control system (CVCS) containment isolation valves. This resulted in inadvertently draining 150 gallons from the reactor coolant system (RCS) while the reactor vessel was in a lowered inventory condition. Immediate corrective actions included entering this issue into their corrective action program (CAP), performing a prompt investigation, and conducting a safety stand-down. In addition, an apparent cause evaluation will be performed to determine any additional corrective actions.

The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events 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 failure to isolate the letdown line prior to draining resulted in the loss of 150 gallons of RCS inventory and challenged the critical safety function of inventory control while in a lowered inventory condition. Operator actions were required to identify and isolate the leak to prevent further inventory loss. The inspectors evaluated this finding using IMC 0609.04, “Initial Characterization of Findings,” issued June 19, 2012, and IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” issued February 28, 2005, and determined that the issue screened to Green (very low safety significance). Specifically, the inspectors determined that adequate mitigating capability remained available and the finding did not represent a loss of control of RCS level due to less than 2 feet of inventory loss when not in midloop. As a result, a Phase 2 quantitative assessment was not required and the issue screened to Green. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Teamwork, because CENG individuals and work groups did not adequately communicate and coordinate their activities within and across organizational boundaries to ensure nuclear
safety was maintained. Specifically, a detailed shift turnover between dayshift and nightshift LLRT operators was not completed to ensure that the oncoming operators were aware of the letdown system configuration [H.4]. (Section 1R20)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Emergency and Abnormal Operating Procedures for the Loss of the 21 DC Bus
Green. The inspectors identified an NCV of Technical Specification (TS) 5.4.1, “Procedures,” because Constellation Energy Nuclear Group (CENG) failed to maintain adequate guidance in Emergency Operating Procedure (EOP) 8,

"Functional Recovery Procedure," and/or Abnormal Operating Procedure (AOP) 7J, "Loss of 120 Volt Vital Alternating Current (AC) or 125 Volt Vital Direct Current (DC) Power." Specifically, EOP 8 and/or AOP-7J did not contain adequate instructions to cross-tie the 480 volt AC vital buses to restore the 120 volt AC vital buses during a loss of offsite power (LOOP) event concurrent with a single failure of the 21 125 volt DC bus. As a result, the engineered safety features actuation system (ESFAS) and auxiliary feedwater actuation system (AFAS) would inadvertently actuate on both units if the 120 volt AC vital buses were not restored within a specified period of time. CENG staff's immediate corrective actions included entering this issue into their corrective action program (CAP). Corrective actions planned include revising AOP-7J to add in steps to cross-tie the 480 volt AC vital buses.

The finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and 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, following a LOOP concurrent with a failure of the 21 DC bus, inadvertent ESFAS and AFAS actuations would occur on both units if power is not restored to the vital 120 volt AC buses. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the inspectors determined that this was a legacy procedure issue and did not note any recent reasonable opportunities for CENG personnel to identify this issue. (Section 1R15)

Inspection Report# : 2013005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
11 and 12 AFW Pumps Inoperable due to Valves Misposition
Green: The inspectors identified a self-revealing problem consisting of NCVs of TS 3.7.3, "Auxiliary Feedwater System," and TS 5.4.1, "Procedures," because CENG Operations personnel did not adhere to procedures which resulted in a valve mispositioning event that inadvertently rendered the 11 and 12 turbine driven auxiliary feedwater (AFW) pumps inoperable for approximately 12 hours, a condition prohibited by TSs. Specifically, on February 7, 2014, operators did not perform draining of 11 turbine driven AFW pump steam supply drain line as stated in Operating Instruction (OI)-32A, "Auxiliary Feedwater System," resulting in two main steam (MS) drain valves being left opened. With the drain valves open, an actual auxiliary feedwater actuation system (AFAS) signal would have resulted in steam blowing down into the room via the sump and causing room temperatures to exceed 130°F, the maximum temperature allowed in the room to protect the pump air cooled bearings. Immediate corrective actions included restoring the proper AFW system valve lineup, entering this issue into their CAP, returning the valves to their normal position on Unit 1, and ensuring that similar valves were in the correct position on Unit 2. Planned corrective actions include conducting an apparent cause evaluation to understand the apparent and contributing causes of this event and determine additional corrective actions.

The problem is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically,

Operations personnel lost configuration control of valves MS-225 and MS-228 resulting in the inoperability of the 11 and 12 AFW pumps for approximately 12 hours. The inspectors evaluated the problem using IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued June 19, 2012, and determined that the problem represented an actual loss of function of at least a single train for greater than its TS allowed outage time which required a detailed risk evaluation. The senior reactor analyst performed a detailed risk assessment utilizing the CCNPP Unit 1 simplified plant analysis risk model version 8.2.1 and determined that the problem is of very low safety significance (Green). Specifically, given a 12 hour exposure period with both turbine driven AFW pumps assumed to fail-to-run, the change in the internal events core damage frequency (CDF) was calculated to be in the high 10-8 range (Green). This problem has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because CENG personnel did not follow processes, procedures, and work instructions. Specifically, after draining the 11 AFW pump mud leg, CENG plant operators did not restore MS-225 and MS-228 to their required position as stated in procedure OI-32A [H.8]. (Section 1R15)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Pre-Conditioning of Containment Air Coolers Emergency Outlet Valves
Green. The inspectors identified an NCV of Title 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG's in-service test (IST) procedures did not provide instructions to preclude preconditioning of the containment air cooler (CAC) emergency outlet valves. Specifically, STP-O-065B-2, "21 SRW Subsystem Operability Test," was written such that a full stroke of the CAC emergency outlet valves was allowed prior to performance of the IST stroke time testing of the valves in the open direction. As a result, the 21 CAC emergency outlet valve, 2-CV-1582, was preconditioned during the last four surveillance tests performed on the valve and the 24 CAC emergency outlet valve, 2-CV-1593, was preconditioned during three of the last four surveillance tests performed on the valve. Immediate corrective actions included entering this issue in the CAP. Corrective actions included revising STP-O-065B to prevent future preconditioning of all the CAC emergency outlet valves.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, preconditioning of the CAC emergency outlet valves prior to performing IST stroke time testing could mask valve degradation. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not affect the design or qualification of a mitigating structure, system, and component (SSC), did not represent a loss of system function, did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time, and did not represent an actual loss of function of one or more non-TS trains of equipment, designated as having high safety significance in accordance with the maintenance rule program, for greater than 24 hours. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG staff failed to ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG staff did not provide a complete and accurate procedure that would preclude preconditioning of the CAC emergency outlet valves during in-service testing [H.2(c)]. (Section 1R22)

Inspection Report# : 2013005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate EAL Initiating Condition HA3.1
•Green: The inspectors identified a Green NCV of 10 CFR 50.54 (q)(2) and 10 CFR 50.47(b)(4) because Exelon did not maintain the emergency plan to adequately meet the standards in 10 CFR 50.47(b)(4). Specifically, Exelon failed to include Unit 1 and Unit 2 component cooling (CC) rooms under EAL initiating condition HA3.1. As a result, an Alert declaration would have not been made during a hazardous gas event in a vital area. Exelon entered this issue into their CAP as condition report (CR)-2014-004683. Immediate corrective actions included revising EAL initiating condition HA3.1 to include the CC rooms and verify that there are no other areas that need to be included in EAL HA3.1.

The failure to update the EAL scheme the site approved emergency plan following a plant modification was a performance deficiency that was within the Exelon staff ability to foresee and correct and should have been prevented. Using IMC 0612, Appendix B, “Issue Screening,” the performance deficiency was determined to be more than minor because it impacted the procedure quality attribute of the Emergency Preparedness cornerstone and adversely impacts the associated cornerstone objective “to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.” Specifically, a plant modification was completed which required operators to be able to enter the CC room in order to bring the plant to cold shutdown and the EAL scheme was not updated to reflect this change. The inspectors utilized IMC 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” to determine the significance of the performance deficiency. The performance deficiency is associated with the emergency classification planning standard and is considered a RSPS function. This performance deficiency impacts the following required planning standard and RSPS function: The inspectors were directed by the SDP to compare the performance deficiency with the examples in Section 5.4, “10 CFR 50.47(b)(4), Emergency Classification System,” to evaluate the significance of this performance deficiency. The inspectors determined that the EAL was ineffective because it, in and of itself, no longer resulted in a timely and accurate declaration of an Alert for the initiating condition. Utilizing Figure 5.4.1, an ineffective EAL where an Alert would not be declared when required would screen as a Green finding.

This finding has a cross-cutting aspect in the area of Human Performance, Change Management, because Exelon personnel didn’t use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, Engineering personnel did not ensure that the impact to the Emergency Plan was adequately evaluated as a result of the permanent plant change engineering change package (ECP)-11-000983 [H.3]. (Section 1R15)

Inspection Report# : 2014003 *(pdf)*

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** Sep 27, 2013
Identified By: NRC
Item Type: FIN Finding
PI&R Report Summary
The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Constellation appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Constellation typically implemented corrective actions to address the problems identified in the CAP in a timely manner.

The inspectors concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs operations. In addition, based on those items selected for review, the inspectors determined that Constellation self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.
Inspection Report# : 2013008 *(pdf)*

Last modified : August 29, 2014

Calvert Cliffs 1
3Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent Loss of RCS Inventory During Lowered Inventory Conditions
Green: The inspectors identified a self-revealing NCV of Technical Specification (TS) 5.4.1, “Procedures,” for the failure of Constellation Energy Nuclear Group, LLC (CENG) personnel to adequately implement procedures associated with a local leak rate test (LLRT). Specifically, CENG personnel did not isolate the letdown line in accordance with surveillance test procedure (STP)-O-108D-1, “Containment Penetration Local Leak Rate Tests,” prior to draining the piping in preparation for an LLRT on chemical and volume control system (CVCS) containment isolation valves. This resulted in inadvertently draining 150 gallons from the reactor coolant system (RCS) while the reactor vessel was in a lowered inventory condition. Immediate corrective actions included entering this issue into their corrective action program (CAP), performing a prompt investigation, and conducting a safety stand-down. In addition, an apparent cause evaluation will be performed to determine any additional corrective actions.

The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events 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 failure to isolate the letdown line prior to draining resulted in the loss of 150 gallons of RCS inventory and challenged the critical safety function of inventory control while in a lowered inventory condition. Operator actions were required to identify and isolate the leak to prevent further inventory loss. The inspectors evaluated this finding using IMC 0609.04, “Initial Characterization of Findings,” issued June 19, 2012, and IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” issued February 28, 2005, and determined that the issue screened to Green (very low safety significance). Specifically, the inspectors determined that adequate mitigating capability remained available and the finding did not represent a loss of control of RCS level due to less than 2 feet of inventory loss when not in midloop. As a result, a Phase 2 quantitative assessment was not required and the issue screened to Green. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Teamwork, because CENG individuals and work groups did not adequately communicate and coordinate their activities within and across organizational boundaries to ensure nuclear
safety was maintained. Specifically, a detailed shift turnover between dayshift and nightshift LLRT operators was not completed to ensure that the oncoming operators were aware of the letdown system configuration [H.4]. (Section 1R20)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Emergency and Abnormal Operating Procedures for the Loss of the 21 DC Bus
Green. The inspectors identified an NCV of Technical Specification (TS) 5.4.1, “Procedures,” because Constellation Energy Nuclear Group (CENG) failed to maintain adequate guidance in Emergency Operating Procedure (EOP) 8,

"Functional Recovery Procedure," and/or Abnormal Operating Procedure (AOP) 7J, "Loss of 120 Volt Vital Alternating Current (AC) or 125 Volt Vital Direct Current (DC) Power." Specifically, EOP 8 and/or AOP-7J did not contain adequate instructions to cross-tie the 480 volt AC vital buses to restore the 120 volt AC vital buses during a loss of offsite power (LOOP) event concurrent with a single failure of the 21 125 volt DC bus. As a result, the engineered safety features actuation system (ESFAS) and auxiliary feedwater actuation system (AFAS) would inadvertently actuate on both units if the 120 volt AC vital buses were not restored within a specified period of time. CENG staff's immediate corrective actions included entering this issue into their corrective action program (CAP). Corrective actions planned include revising AOP-7J to add in steps to cross-tie the 480 volt AC vital buses.

The finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and 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, following a LOOP concurrent with a failure of the 21 DC bus, inadvertent ESFAS and AFAS actuations would occur on both units if power is not restored to the vital 120 volt AC buses. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the inspectors determined that this was a legacy procedure issue and did not note any recent reasonable opportunities for CENG personnel to identify this issue. (Section 1R15)

Inspection Report# : 2013005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
11 and 12 AFW Pumps Inoperable due to Valves Misposition
Green: The inspectors identified a self-revealing problem consisting of NCVs of TS 3.7.3, "Auxiliary Feedwater System," and TS 5.4.1, "Procedures," because CENG Operations personnel did not adhere to procedures which resulted in a valve mispositioning event that inadvertently rendered the 11 and 12 turbine driven auxiliary feedwater (AFW) pumps inoperable for approximately 12 hours, a condition prohibited by TSs. Specifically, on February 7, 2014, operators did not perform draining of 11 turbine driven AFW pump steam supply drain line as stated in Operating Instruction (OI)-32A, "Auxiliary Feedwater System," resulting in two main steam (MS) drain valves being left opened. With the drain valves open, an actual auxiliary feedwater actuation system (AFAS) signal would have resulted in steam blowing down into the room via the sump and causing room temperatures to exceed 130°F, the maximum temperature allowed in the room to protect the pump air cooled bearings. Immediate corrective actions included restoring the proper AFW system valve lineup, entering this issue into their CAP, returning the valves to their normal position on Unit 1, and ensuring that similar valves were in the correct position on Unit 2. Planned corrective actions include conducting an apparent cause evaluation to understand the apparent and contributing causes of this event and determine additional corrective actions.

The problem is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically,

Operations personnel lost configuration control of valves MS-225 and MS-228 resulting in the inoperability of the 11 and 12 AFW pumps for approximately 12 hours. The inspectors evaluated the problem using IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued June 19, 2012, and determined that the problem represented an actual loss of function of at least a single train for greater than its TS allowed outage time which required a detailed risk evaluation. The senior reactor analyst performed a detailed risk assessment utilizing the CCNPP Unit 1 simplified plant analysis risk model version 8.2.1 and determined that the problem is of very low safety significance (Green). Specifically, given a 12 hour exposure period with both turbine driven AFW pumps assumed to fail-to-run, the change in the internal events core damage frequency (CDF) was calculated to be in the high 10-8 range (Green). This problem has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because CENG personnel did not follow processes, procedures, and work instructions. Specifically, after draining the 11 AFW pump mud leg, CENG plant operators did not restore MS-225 and MS-228 to their required position as stated in procedure OI-32A [H.8]. (Section 1R15)

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Pre-Conditioning of Containment Air Coolers Emergency Outlet Valves
Green. The inspectors identified an NCV of Title 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion XI, "Test Control," because CENG's in-service test (IST) procedures did not provide instructions to preclude preconditioning of the containment air cooler (CAC) emergency outlet valves. Specifically, STP-O-065B-2, "21 SRW Subsystem Operability Test," was written such that a full stroke of the CAC emergency outlet valves was allowed prior to performance of the IST stroke time testing of the valves in the open direction. As a result, the 21 CAC emergency outlet valve, 2-CV-1582, was preconditioned during the last four surveillance tests performed on the valve and the 24 CAC emergency outlet valve, 2-CV-1593, was preconditioned during three of the last four surveillance tests performed on the valve. Immediate corrective actions included entering this issue in the CAP. Corrective actions included revising STP-O-065B to prevent future preconditioning of all the CAC emergency outlet valves.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, preconditioning of the CAC emergency outlet valves prior to performing IST stroke time testing could mask valve degradation. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not affect the design or qualification of a mitigating structure, system, and component (SSC), did not represent a loss of system function, did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time, and did not represent an actual loss of function of one or more non-TS trains of equipment, designated as having high safety significance in accordance with the maintenance rule program, for greater than 24 hours. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because CENG staff failed to ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, CENG staff did not provide a complete and accurate procedure that would preclude preconditioning of the CAC emergency outlet valves during in-service testing [H.2(c)]. (Section 1R22)

Inspection Report# : 2013005 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Main Steam Line Drain Containment Isolation Valves not Scoped in IST
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.55a, "Codes and Standards," for Exelon's failure to meet the test requirements set forth in the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for main steam line drains (MSLDs) and containment isolation valves (CIVs) motor operated valves (MOVs) (6611, 6612, 6613, 6615, 6620, 6621). Specifically, Exelon failed to scope the MSLD MOVs in their in-service testing (IST) program. As a result, the MOVs reliability was not ensured due to valve degradation not being trended as required in the IST program. Also, the MOV operability was in question because the valves were never tested to perform their containment isolation function. Exelon entered this issue into their corrective action program (CAP) as condition report (CR)-2014-005961. Immediate corrective actions included testing the MOVs.

The inspectors determined that the failure to scope and meet the testing requirements of the OM Code for MSLD MOVs in accordance with 10 CFR 50.55a was a performance deficiency. This finding is more than minor because it was associated with the barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to scope and test the MSLD MOVs in accordance with the OM Code did not ensure component reliability by monitoring valve degradation and did not provide assurance that the MSLD MOVs would perform their CIV function in order to protect the public from radionuclides releases during a steam generator tube rupture (SGTR) with a loss of offsite power event. The inspectors reviewed IMC 0609.04, "Initial Characterization of Findings," issued June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions" issued June 19, 2012, and determined that the finding was of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components and the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that this finding did

not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the 2007 IST fourth year interval submittal was the last reasonable opportunity for Exelon to identify this issue. (Section 1R04)

Inspection Report# : 2014003 *(pdf)*
Inspection Report# : 2014004 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate EAL Initiating Condition HA3.1

•Green: The inspectors identified a Green NCV of 10 CFR 50.54 (q)(2) and 10 CFR 50.47(b)(4) because Exelon did not maintain the emergency plan to adequately meet the standards in 10 CFR 50.47(b)(4). Specifically, Exelon failed to include Unit 1 and Unit 2 component cooling (CC) rooms under EAL initiating condition HA3.1. As a result, an Alert declaration would have not been made during a hazardous gas event in a vital area. Exelon entered this issue into their CAP as condition report (CR)-2014-004683. Immediate corrective actions included revising EAL initiating condition HA3.1 to include the CC rooms and verify that there are no other areas that need to be included in EAL HA3.1.

The failure to update the EAL scheme the site approved emergency plan following a plant modification was a performance deficiency that was within the Exelon staff ability to foresee and correct and should have been prevented. Using IMC 0612, Appendix B, “Issue Screening,” the performance deficiency was determined to be more than minor because it impacted the procedure quality attribute of the Emergency Preparedness cornerstone and adversely impacts the associated cornerstone objective “to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.” Specifically, a plant modification was completed which required operators to be able to enter the CC room in order to bring the plant to cold shutdown and the EAL scheme was not updated to reflect this change. The inspectors utilized IMC 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” to determine the significance of the performance deficiency. The performance deficiency is associated with the emergency classification planning standard and is considered a RSPS function. This performance deficiency impacts the following required planning standard and RSPS function: The inspectors were directed by the SDP to compare the performance deficiency with the examples in Section 5.4, “10 CFR 50.47(b)(4), Emergency Classification System,” to evaluate the significance of this performance deficiency. The inspectors determined that the EAL was ineffective because it, in and of itself, no longer resulted in a timely and accurate declaration of an Alert for the initiating condition. Utilizing Figure 5.4.1, an ineffective EAL where an Alert would not be declared when required would screen as a Green finding.

This finding has a cross-cutting aspect in the area of Human Performance, Change Management, because Exelon personnel didn’t use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, Engineering personnel did not ensure that the impact to the Emergency Plan was adequately evaluated as a result of the permanent plant change engineering change package (ECP)-11-000983 [H.3]. (Section 1R15)

Inspection Report# : 2014003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

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

information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : November 26, 2014

Calvert Cliffs 1
4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent Loss of RCS Inventory During Lowered Inventory Conditions
Green: The inspectors identified a self-revealing NCV of Technical Specification (TS) 5.4.1, “Procedures,” for the failure of Constellation Energy Nuclear Group, LLC (CENG) personnel to adequately implement procedures associated with a local leak rate test (LLRT). Specifically, CENG personnel did not isolate the letdown line in accordance with surveillance test procedure (STP)-O-108D-1, “Containment Penetration Local Leak Rate Tests,” prior to draining the piping in preparation for an LLRT on chemical and volume control system (CVCS) containment isolation valves. This resulted in inadvertently draining 150 gallons from the reactor coolant system (RCS) while the reactor vessel was in a lowered inventory condition. Immediate corrective actions included entering this issue into their corrective action program (CAP), performing a prompt investigation, and conducting a safety stand-down. In addition, an apparent cause evaluation will be performed to determine any additional corrective actions.

The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events 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 failure to isolate the letdown line prior to draining resulted in the loss of 150 gallons of RCS inventory and challenged the critical safety function of inventory control while in a lowered inventory condition. Operator actions were required to identify and isolate the leak to prevent further inventory loss. The inspectors evaluated this finding using IMC 0609.04, “Initial Characterization of Findings,” issued June 19, 2012, and IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” issued February 28, 2005, and determined that the issue screened to Green (very low safety significance). Specifically, the inspectors determined that adequate mitigating capability remained available and the finding did not represent a loss of control of RCS level due to less than 2 feet of inventory loss when not in midloop. As a result, a Phase 2 quantitative assessment was not required and the issue screened to Green. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Teamwork, because CENG individuals and work groups did not adequately communicate and coordinate their activities within and across organizational boundaries to ensure nuclear
safety was maintained. Specifically, a detailed shift turnover between dayshift and nightshift LLRT operators was not completed to ensure that the oncoming operators were aware of the letdown system configuration [H.4]. (Section 1R20)

Inspection Report# : 2014002 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2014
Identified By: Self-Revealing

Item Type: NCV NonCited Violation
11 and 12 AFW Pumps Inoperable due to Valves Misposition
Green: The inspectors identified a self-revealing problem consisting of NCVs of TS 3.7.3, “Auxiliary Feedwater System,” and TS 5.4.1, “Procedures,” because CENG Operations personnel did not adhere to procedures which resulted in a valve mispositioning event that inadvertently rendered the 11 and 12 turbine driven auxiliary feedwater (AFW) pumps inoperable for approximately 12 hours, a condition prohibited by TSs. Specifically, on February 7, 2014, operators did not perform draining of 11 turbine driven AFW pump steam supply drain line as stated in Operating Instruction (OI)-32A, “Auxiliary Feedwater System,” resulting in two main steam (MS) drain valves being left opened. With the drain valves open, an actual auxiliary feedwater actuation system (AFAS) signal would have resulted in steam blowing down into the room via the sump and causing room temperatures to exceed 130°F, the maximum temperature allowed in the room to protect the pump air cooled bearings. Immediate corrective actions included restoring the proper AFW system valve lineup, entering this issue into their CAP, returning the valves to their normal position on Unit 1, and ensuring that similar valves were in the correct position on Unit 2. Planned corrective actions include conducting an apparent cause evaluation to understand the apparent and contributing causes of this event and determine additional corrective actions.

The problem is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Operations personnel lost configuration control of valves MS-225 and MS-228 resulting in the inoperability of the 11 and 12 AFW pumps for approximately 12 hours. The inspectors evaluated the problem using IMC 0609.04, “Initial Characterization of Findings,” and IMC 0609, Appendix A, “The Significance Determination Process for Findings at Power,” Exhibit 2, “Mitigating Systems Screening Questions,” issued June 19, 2012, and determined that the problem represented an actual loss of function of at least a single train for greater than its TS allowed outage time which required a detailed risk evaluation. The senior reactor analyst performed a detailed risk assessment utilizing the CCNPP Unit 1 simplified plant analysis risk model version 8.2.1 and determined that the problem is of very low safety significance (Green). Specifically, given a 12 hour exposure period with both turbine driven AFW pumps assumed to fail-to-run, the change in the internal events core damage frequency (CDF) was calculated to be in the high 10-8 range (Green). This problem has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because CENG personnel did not follow processes, procedures, and work instructions. Specifically, after draining the 11 AFW pump mud leg, CENG plant operators did not restore MS-225 and MS-228 to their required position as stated in procedure OI-32A [H.8]. (Section 1R15)

Inspection Report# : 2014002 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Spent Fuel Pool Cask Handling Crane 10 CFR 50.65(a)(2) Performance Not Met
•Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” paragraph (a)(2), because Exelon did not adequately demonstrate that the spent fuel pool cask handling crane (SFPCHC) (a)(2) performance was effectively controlled through performance of appropriate preventative maintenance. Specifically, Exelon did not identify and properly account for a maintenance rule functional failure (MRFF) of the SFPCHC in September 2013, and thereby did not recognize that the crane exceeded its performance criteria and required a Maintenance Rule (a)(1)

determination. Exelon entered this issue in the corrective action program (CAP) as incident report (IR) 02422876. Exelon's immediate corrective actions were to reclassify the September 2013 failure as a MRFF and conduct a Maintenance Rule (a)(1) determination on the SFPCHC.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the finding is more than minor because it is associated with the structure, system, and component (SSC) performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, following the MRFF of the SFPCHC in October 2014, Exelon personnel did not identify that the crane required a Maintenance Rule (a)(1) determination, to establish if the crane should be monitored in accordance with 10 CFR 50.65(a)(1). As a result, an excessive amount of time passed for Exelon to comply with the requirements of the Maintenance Rule. In accordance with IMC 0609.04, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions," issued on June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in handling errors, dropped storage cask, or crane operations over the spent fuel pool that caused mechanical damage to fuel clad and a detectible release of radionuclides. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Exelon did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Exelon personnel failed to properly evaluate the issue that occurred in September 4, 2013 as a MRFF [P.2]. (Section 1R12)

Inspection Report# : 2014005 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Main Steam Line Drain Containment Isolation Valves not Scoped in IST
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.55a, "Codes and Standards," for Exelon's failure to meet the test requirements set forth in the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for main steam line drains (MSLDs) and containment isolation valves (CIVs) motor operated valves (MOVs) (6611, 6612, 6613, 6615, 6620, 6621). Specifically, Exelon failed to scope the MSLD MOVs in their in-service testing (IST) program. As a result, the MOVs reliability was not ensured due to valve degradation not being trended as required in the IST program. Also, the MOV operability was in question because the valves were never tested to perform their containment isolation function. Exelon entered this issue into their corrective action program (CAP) as condition report (CR)-2014-005961. Immediate corrective actions included testing the MOVs.

The inspectors determined that the failure to scope and meet the testing requirements of the OM Code for MSLD MOVs in accordance with 10 CFR 50.55a was a performance deficiency. This finding is more than minor because it was associated with the barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to scope and test the MSLD MOVs in accordance with the OM Code did not ensure component reliability by monitoring valve degradation and did not provide assurance that the MSLD MOVs would perform their CIV function in order to protect the public from radionuclides releases during a steam generator tube rupture (SGTR) with a loss of offsite power event. The inspectors reviewed IMC 0609.04, "Initial Characterization of Findings," issued June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions" issued June 19, 2012, and determined that the finding was of very low safety significance (Green) because the finding did not represent an actual open pathway in the

physical integrity of reactor containment, containment isolation system, and heat removal components and the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that this finding did

not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the 2007 IST fourth year interval submittal was the last reasonable opportunity for Exelon to identify this issue. (Section 1R04)

Inspection Report# : 2014003 *(pdf)*
Inspection Report# : 2014004 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate EAL Initiating Condition HA3.1
•Green: The inspectors identified a Green NCV of 10 CFR 50.54 (q)(2) and 10 CFR 50.47(b)(4) because Exelon did not maintain the emergency plan to adequately meet the standards in 10 CFR 50.47(b)(4). Specifically, Exelon failed to include Unit 1 and Unit 2 component cooling (CC) rooms under EAL initiating condition HA3.1. As a result, an Alert declaration would have not been made during a hazardous gas event in a vital area. Exelon entered this issue into their CAP as condition report (CR)-2014-004683. Immediate corrective actions included revising EAL initiating condition HA3.1 to include the CC rooms and verify that there are no other areas that need to be included in EAL HA3.1.

The failure to update the EAL scheme the site approved emergency plan following a plant modification was a performance deficiency that was within the Exelon staff ability to foresee and correct and should have been prevented. Using IMC 0612, Appendix B, “Issue Screening,” the performance deficiency was determined to be more than minor because it impacted the procedure quality attribute of the Emergency Preparedness cornerstone and adversely impacts the associated cornerstone objective “to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.” Specifically, a plant modification was completed which required operators to be able to enter the CC room in order to bring the plant to cold shutdown and the EAL scheme was not updated to reflect this change. The inspectors utilized IMC 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” to determine the significance of the performance deficiency. The performance deficiency is associated with the emergency classification planning standard and is considered a RSPS function. This performance deficiency impacts the following required planning standard and RSPS function: The inspectors were directed by the SDP to compare the performance deficiency with the examples in Section 5.4, “10 CFR 50.47(b)(4), Emergency Classification System,” to evaluate the significance of this performance deficiency. The inspectors determined that the EAL was ineffective because it, in and of itself, no longer resulted in a timely and accurate declaration of an Alert for the initiating condition. Utilizing Figure 5.4.1, an ineffective EAL where an Alert would not be declared when required would screen as a Green finding.

This finding has a cross-cutting aspect in the area of Human Performance, Change Management, because Exelon personnel didn’t use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, Engineering personnel did not ensure that the impact to the Emergency Plan was adequately evaluated as a result of the permanent plant change engineering change package (ECP)-11-000983 [H.3].

(Section 1R15)

Inspection Report# : 2014003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

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

Miscellaneous

Last modified : February 26, 2015

Calvert Cliffs 1
1Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Component Cooling Operated in Unanalyzed Condition
Green: The inspectors identified a Green NCV of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.5, "Component Cooling (CC) System," and 3.0.3, because Exelon operated Units 1 and 2 CC systems in an unanalyzed condition on 18 occasions and operated in a condition prohibited by TS on two occasions within the last three years. The inspectors determined that Exelon's operation with both CC loops inoperable and the subsequent failure to place the unit in Mode 5 within 37 hours as required by TS is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02439913. Exelon's immediate corrective actions included the submission of event notification (EN) 50752 and prohibiting operation of the CC system in a configuration outside of that specified in the TS bases while further analysis was conducted.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the configuration 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, the station operated with two CC loops unable to perform their safety function of maintaining component cooling heat exchanger (CCHX) outlet temperatures at or below 120°F. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of a system and/or function. The detailed risk evaluation considered that the deficiency could have, under some ultimate heat sink temperature conditions, resulted in the CCHX outlet temperatures exceeding the design analyzed limit of 120°F following the recirculation actuation signal (RAS) during a loss of coolant accident (LOCA). The Senior Reactor Analyst performed a bounding significance determination by conservatively assuming a complete loss of safety function for the CCHXs for the applicable limited exposure time. Emergency operating procedures also had contingencies for a postulated loss of the CC function which directed the re-alignment of a containment spray (CS) pump to ensure adequate safety injection is maintained. This evaluation determined the issue was of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Design Margins, because Exelon did not operate and maintain equipment within design margins. Specifically, Exelon operated the CC system outside its design safety-related specification, resulting in an operating condition prohibited by TS [H.6]. (Section 1R04)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Risk Management Action for LOCI Sequencer Maintenance
Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65(a)(4) because Exelon did not implement adequate risk management actions (RMA) during the replacement of the loss of coolant incident (LOCI) sequencer for the safety-related 11 4KV [kilovolt] bus in accordance with station procedures. The inspectors determined that Exelon's failure to establish adequate RMA's during the performance of LOCI sequencer maintenance activities in accordance with CNG-OP-4.01-1000 is a performance deficiency. Exelon's immediate corrective actions included entering this issue into their CAP as IR02444523

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it was associated with the procedure quality 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, without adequate RMAs per station procedure CNG-OP-4.01-1000, the capability of the 0C alternate alternating current (AAC) diesel generator (DG) to perform its safety function of powering the 11 4KV bus was adversely impacted. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and noted that this issue is sufficiently similar to examples 7.e and 7.f, in that, Exelon was required, under plant procedures, to establish RMAs or additional RMAs. The inspectors, with the assistance of a Region I Senior Reactor Analyst, evaluated this finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," issued on May 19, 2005. Using Appendix K, Flowchart 2, "Assessment of RMAs," the inspectors determined that the finding was of very low safety significance (Green) based upon the short duration exposure time (approximately one hour). Specifically, comparing the licensee's calculated Yellow (1E-5) annualized risk for this maintenance evolution to the actual (1E-4/year X 1 year/8760 hours = 1E-8) incremental risk increase places the risk of this finding below the Incremental Core Damage Probability (ICDP) > 1E-6 threshold, resulting in a very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, Exelon failed to adequately plan, control, and execute the LOCI sequencer maintenance activity by establishing adequate RMAs that would have provided alternate success paths for maintaining the safety function of the out of service structures, systems, and components (SSCs) [H.5]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Spent Fuel Pool Cask Handling Crane 10 CFR 50.65(a)(2) Performance Not Met
•Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), because Exelon did not adequately demonstrate that the spent fuel pool cask handling crane (SFPCHC) (a)(2) performance was effectively controlled through performance of appropriate preventative maintenance. Specifically, Exelon did not identify and properly account for a maintenance rule functional failure (MRFF) of the SFPCHC in September 2013,

and thereby did not recognize that the crane exceeded its performance criteria and required a Maintenance Rule (a)(1) determination. Exelon entered this issue in the corrective action program (CAP) as incident report (IR) 02422876. Exelon's immediate corrective actions were to reclassify the September 2013 failure as a MRFF and conduct a Maintenance Rule (a)(1) determination on the SFPCHC.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the finding is more than minor because it is associated with the structure, system, and component (SSC) performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, following the MRFF of the SFPCHC in October 2014, Exelon personnel did not identify that the crane required a Maintenance Rule (a)(1) determination, to establish if the crane should be monitored in accordance with 10 CFR 50.65(a)(1). As a result, an excessive amount of time passed for Exelon to comply with the requirements of the Maintenance Rule. In accordance with IMC 0609.04, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions," issued on June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in handling errors, dropped storage cask, or crane operations over the spent fuel pool that caused mechanical damage to fuel clad and a detectible release of radionuclides. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Exelon did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Exelon personnel failed to properly evaluate the issue that occurred in September 4, 2013 as a MRFF [P.2]. (Section 1R12)

Inspection Report# : 2014005 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Main Steam Line Drain Containment Isolation Valves not Scoped in IST
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.55a, "Codes and Standards," for Exelon's failure to meet the test requirements set forth in the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for main steam line drains (MSLDs) and containment isolation valves (CIVs) motor operated valves (MOVs) (6611, 6612, 6613, 6615, 6620, 6621). Specifically, Exelon failed to scope the MSLD MOVs in their in-service testing (IST) program. As a result, the MOVs reliability was not ensured due to valve degradation not being trended as required in the IST program. Also, the MOV operability was in question because the valves were never tested to perform their containment isolation function. Exelon entered this issue into their corrective action program (CAP) as condition report (CR)-2014-005961. Immediate corrective actions included testing the MOVs.

The inspectors determined that the failure to scope and meet the testing requirements of the OM Code for MSLD MOVs in accordance with 10 CFR 50.55a was a performance deficiency. This finding is more than minor because it was associated with the barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to scope and test the MSLD MOVs in accordance with the OM Code did not ensure component reliability by monitoring valve degradation and did not provide assurance that the MSLD MOVs would perform their CIV function in order to protect the public from radionuclides releases during a steam generator tube rupture (SGTR) with a loss of offsite power event. The inspectors reviewed IMC 0609.04, "Initial Characterization of Findings," issued June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions" issued June 19, 2012, and determined that the finding

was of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components and the finding did not involve an actual reduction of hydrogen igniters in the reactor containment. The inspectors determined that this finding did

not have a cross-cutting aspect because the most significant contributor to the performance deficiency was not reflective of current licensee performance. Specifically, the 2007 IST fourth year interval submittal was the last reasonable opportunity for Exelon to identify this issue. (Section 1R04)

Inspection Report# : 2014004 *(pdf)*
Inspection Report# : 2014003 *(pdf)*

Emergency Preparedness

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate EAL Initiating Condition HA3.1
•Green: The inspectors identified a Green NCV of 10 CFR 50.54 (q)(2) and 10 CFR 50.47(b)(4) because Exelon did not maintain the emergency plan to adequately meet the standards in 10 CFR 50.47(b)(4). Specifically, Exelon failed to include Unit 1 and Unit 2 component cooling (CC) rooms under EAL initiating condition HA3.1. As a result, an Alert declaration would have not been made during a hazardous gas event in a vital area. Exelon entered this issue into their CAP as condition report (CR)-2014-004683. Immediate corrective actions included revising EAL initiating condition HA3.1 to include the CC rooms and verify that there are no other areas that need to be included in EAL HA3.1.

The failure to update the EAL scheme the site approved emergency plan following a plant modification was a performance deficiency that was within the Exelon staff ability to foresee and correct and should have been prevented. Using IMC 0612, Appendix B, “Issue Screening,” the performance deficiency was determined to be more than minor because it impacted the procedure quality attribute of the Emergency Preparedness cornerstone and adversely impacts the associated cornerstone objective “to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.” Specifically, a plant modification was completed which required operators to be able to enter the CC room in order to bring the plant to cold shutdown and the EAL scheme was not updated to reflect this change. The inspectors utilized IMC 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” to determine the significance of the performance deficiency. The performance deficiency is associated with the emergency classification planning standard and is considered a RSPS function. This performance deficiency impacts the following required planning standard and RSPS function: The inspectors were directed by the SDP to compare the performance deficiency with the examples in Section 5.4, “10 CFR 50.47(b)(4), Emergency Classification System,” to evaluate the significance of this performance deficiency. The inspectors determined that the EAL was ineffective because it, in and of itself, no longer resulted in a timely and accurate declaration of an Alert for the initiating condition. Utilizing Figure 5.4.1, an ineffective EAL where an Alert would not be declared when required would screen as a Green finding.

This finding has a cross-cutting aspect in the area of Human Performance, Change Management, because Exelon personnel didn’t use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, Engineering personnel did not ensure that the impact to the Emergency Plan was

adequately evaluated as a result of the permanent plant change engineering change package (ECP)-11-000983 [H.3]. (Section 1R15)

Inspection Report# : 2014003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

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

Miscellaneous

Last modified : June 16, 2015

Calvert Cliffs 1
2Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Maintenance Instructions for Replacement of the Units 1 and 2 Containment Air Cooler Starters
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 containment air coolers (CAC) starters and contactors were replaced during plant modifications. The starter and contactors with associated mechanical interlocks and auxiliary contacts provide the necessary electrical coordination to shift the CACs from fast to slow speed during a safety injection actuation signal (SIAS). The starter and contactor replacements occurred from July 2002 to July 2004. The inspectors determined that Exelon's failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 CAC starters and contactors were replaced during plant modifications is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02408755, completed an apparent cause evaluation (ACE), and completed corrective action work orders (WO) to adjust all associated starters and contactors auxiliary contacts.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the Mitigating Systems cornerstone attribute of design control 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 evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, "Mitigating Systems Screenings Questions," issued on June 19, 2012, and determined a detailed risk evaluation was required for the actual loss of function of the 13 CAC for greater than its technical specification (TS) allowed outage time. A regional Senior Reactor Analyst performed a detailed risk evaluation using the Calvert Cliffs Standardized Plant Analysis Risk (SPAR) Model for Calvert Cliffs Unit 1, Version 8.27, for internal events and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance. (Section 4OA2.1)

Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Component Cooling Operated in Unanalyzed Condition

Green: The inspectors identified a Green NCV of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.5, "Component Cooling (CC) System," and 3.0.3, because Exelon operated Units 1 and 2 CC systems in an unanalyzed condition on 18 occasions and operated in a condition prohibited by TS on two occasions within the last three years. The inspectors determined that Exelon's operation with both CC loops inoperable and the subsequent failure to place the unit in Mode 5 within 37 hours as required by TS is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02439913. Exelon's immediate corrective actions included the submission of event notification (EN) 50752 and prohibiting operation of the CC system in a configuration outside of that specified in the TS bases while further analysis was conducted.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the configuration 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, the station operated with two CC loops unable to perform their safety function of maintaining component cooling heat exchanger (CCHX) outlet temperatures at or below 120°F. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of a system and/or function. The detailed risk evaluation considered that the deficiency could have, under some ultimate heat sink temperature conditions, resulted in the CCHX outlet temperatures exceeding the design analyzed limit of 120°F following the recirculation actuation signal (RAS) during a loss of coolant accident (LOCA). The Senior Reactor Analyst performed a bounding significance determination by conservatively assuming a complete loss of safety function for the CCHXs for the applicable limited exposure time. Emergency operating procedures also had contingencies for a postulated loss of the CC function which directed the re-alignment of a containment spray (CS) pump to ensure adequate safety injection is maintained. This evaluation determined the issue was of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Design Margins, because Exelon did not operate and maintain equipment within design margins. Specifically, Exelon operated the CC system outside its design safety-related specification, resulting in an operating condition prohibited by TS [H.6]. (Section 1R04)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Risk Management Action for LOCI Sequencer Maintenance
Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65(a)(4) because Exelon did not implement adequate risk management actions (RMA) during the replacement of the loss of coolant incident (LOCI) sequencer for the safety-related 11 4KV [kilovolt] bus in accordance with station procedures. The inspectors determined that Exelon's failure to establish adequate RMA's during the performance of LOCI sequencer maintenance activities in accordance with CNG-OP-4.01-1000 is a performance deficiency. Exelon's immediate corrective actions included entering this issue into their CAP as IR02444523

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it was associated with the procedure quality 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, without adequate RMAs per station procedure CNG-OP-4.01-1000, the capability of the 0C alternate alternating current (AAC) diesel generator (DG) to perform its safety function of powering the 11 4KV bus was adversely impacted. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and noted that this issue is sufficiently similar to examples 7.e and 7.f, in

that, Exelon was required, under plant procedures, to establish RMAs or additional RMAs. The inspectors, with the assistance of a Region I Senior Reactor Analyst, evaluated this finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," issued on May 19, 2005. Using Appendix K, Flowchart 2, "Assessment of RMAs," the inspectors determined that the finding was of very low safety significance (Green) based upon the short duration exposure time (approximately one hour). Specifically, comparing the licensee's calculated Yellow (1E-5) annualized risk for this maintenance evolution to the actual (1E-4/year X 1 year/8760 hours = 1E-8) incremental risk increase places the risk of this finding below the Incremental Core Damage Probability (ICDP) > 1E-6 threshold, resulting in a very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, Exelon failed to adequately plan, control, and execute the LOCI sequencer maintenance activity by establishing adequate RMAs that would have provided alternate success paths for maintaining the safety function of the out of service structures, systems, and components (SSCs) [H.5]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Significance:  Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Spent Fuel Pool Cask Handling Crane 10 CFR 50.65(a)(2) Performance Not Met
•Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), because Exelon did not adequately demonstrate that the spent fuel pool cask handling crane (SFPCHC) (a)(2) performance was effectively controlled through performance of appropriate preventative maintenance. Specifically, Exelon did not identify and properly account for a maintenance rule functional failure (MRFF) of the SFPCHC in September 2013, and thereby did not recognize that the crane exceeded its performance criteria and required a Maintenance Rule (a)(1) determination. Exelon entered this issue in the corrective action program (CAP) as incident report (IR) 02422876. Exelon's immediate corrective actions were to reclassify the September 2013 failure as a MRFF and conduct a Maintenance Rule (a)(1) determination on the SFPCHC.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the finding is more than minor because it is associated with the structure, system, and component (SSC) performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, following the MRFF of the SFPCHC in October 2014, Exelon personnel did not identify that the crane required a Maintenance Rule (a)(1) determination, to establish if the crane should be monitored in accordance with 10 CFR 50.65(a)(1). As a result, an excessive amount of time passed for Exelon to comply with the requirements of the Maintenance Rule. In accordance with IMC 0609.04, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions," issued on June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in handling errors, dropped storage cask, or crane operations over the spent fuel pool that caused mechanical damage to fuel clad and a detectible release of radionuclides. The inspectors determined that the finding has a cross-cutting aspect in the

area of Problem Identification and Resolution, Evaluation, because Exelon did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Exelon personnel failed to properly evaluate the issue that occurred in September 4, 2013 as a MRFF [P.2]. (Section 1R12)

Inspection Report# : 2014005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Properly Ship Category 2 Radioactive Material - Quantity of Concern
•Green. The inspectors identified a Green NCV of 10 CFR 71.5, “Transportation of Licensed Material,” and CFR 172, Subpart I, “Safety and Security Plans.” Specifically, Exelon personnel shipped a Category 2 radioactive material quantity of concern (RAM-QC) on public highways to a waste processor without adhering to a transportation security plan. Prior to shipment, Exelon’s staff failed to recognize that the quantity of radioactive material met the definition RAM-QC. The inspectors determined that Exelon’s failure to ship material as a Category 2 RAM-QC was a performance deficiency. Exelon entered this issue into their CAP as IR02481678 and corrective actions included revising the shipping procedure to reflect the appropriate Department of Transportation requirements for shipment of Category 2 radioactive material. Additionally, Exelon implemented a formal process for reviewing pending regulatory changes for impacts to operations and support activities by the implementation of Exelon Procedure LS-AA-110, “Commitment Management,” Revision 10, in September 2014.

The inspectors reviewed IMC 0612, Appendix B, “Issue Screening,” and determined the issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure 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. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," issued on February 12, 2008, the inspectors determined the finding to be of very low safety significance (Green) because Exelon had an issue involving transportation of radioactive material, but it did not involve: (1) a radiation limit that was exceeded; (2) a breach of package during transport; (3) a certificate of compliance issue; (4) a low level burial ground nonconformance; or (5) a failure to make notifications or provide emergency information. The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance because Exelon successfully implemented its transportation security plan in shipping three Category 2 RAM-QC packages in 2014. (Section 2RS8)

Inspection Report# : 2015002 *(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 : August 07, 2015

Calvert Cliffs 1
3Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish and Maintain Procedures for the Operation of the Diesel Fuel Oil System
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to adequately establish and maintain procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 3, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems." The inspectors determined that Exelon's failure to adequately establish and maintain a procedure for the operation of the diesel fuel oil (DFO) supply system was a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as issue report (IR) 02541107. Exelon's immediate corrective actions included halting of opening of 0-DFO-108, 21 Fuel Oil Storage Tank (FOST) to Auxiliary Boilers Isolation, and initiating an evaluation to determine the seismic adequacy of the piping downstream of 0-DFO-108.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, the failure to adequately establish and maintain procedure Operating Instruction (OI)-21D, "Fuel Oil Storage and Supply," Revision 10, for the operation of the DFO supply system resulted in the alignment of the safety-related 21 FOST to non-safety-related/non-seismically qualified piping thus rendering the 21 FOST inoperable. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," and Exhibit 4, "External Events Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the loss of the 21 FOST would degrade two or more trains of a multi-train system or function. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because Exelon failed to adequately evaluate relevant external operating experience. Specifically, Exelon failed to evaluate for systems where non-seismically qualified piping could be connected to safety-related tanks as was described in Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks." [P.5]. (Section 1R15)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation

Inadequate Maintenance Instructions for Replacement of the Units 1 and 2 Containment Air Cooler Starters
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 containment air coolers (CAC) starters and contactors were replaced during plant modifications. The starter and contactors with associated mechanical interlocks and auxiliary contacts provide the necessary electrical coordination to shift the CACs from fast to slow speed during a safety injection actuation signal (SIAS). The starter and contactor replacements occurred from July 2002 to July 2004. The inspectors determined that Exelon's failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 CAC starters and contactors were replaced during plant modifications is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02408755, completed an apparent cause evaluation (ACE), and completed corrective action work orders (WO) to adjust all associated starters and contactors auxiliary contacts.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the Mitigating Systems cornerstone attribute of design control 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 evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, "Mitigating Systems Screenings Questions," issued on June 19, 2012, and determined a detailed risk evaluation was required for the actual loss of function of the 13 CAC for greater than its technical specification (TS) allowed outage time. A regional Senior Reactor Analyst performed a detailed risk evaluation using the Calvert Cliffs Standardized Plant Analysis Risk (SPAR) Model for Calvert Cliffs Unit 1, Version 8.27, for internal events and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance. (Section 4OA2.1)

Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Component Cooling Operated in Unanalyzed Condition
Green: The inspectors identified a Green NCV of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.5, "Component Cooling (CC) System," and 3.0.3, because Exelon operated Units 1 and 2 CC systems in an unanalyzed condition on 18 occasions and operated in a condition prohibited by TS on two occasions within the last three years. The inspectors determined that Exelon's operation with both CC loops inoperable and the subsequent failure to place the unit in Mode 5 within 37 hours as required by TS is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02439913. Exelon's immediate corrective actions included the submission of event notification (EN) 50752 and prohibiting operation of the CC system in a configuration outside of that specified in the TS bases while further analysis was conducted.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the configuration 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, the station operated with two CC loops unable to perform their safety function of maintaining component cooling heat exchanger (CCHX) outlet temperatures at or below 120°F. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk

evaluation was necessary to disposition the significance of this finding because the finding represented a loss of a system and/or function. The detailed risk evaluation considered that the deficiency could have, under some ultimate heat sink temperature conditions, resulted in the CCHX outlet temperatures exceeding the design analyzed limit of 120°F following the recirculation actuation signal (RAS) during a loss of coolant accident (LOCA). The Senior Reactor Analyst performed a bounding significance determination by conservatively assuming a complete loss of safety function for the CCHXs for the applicable limited exposure time. Emergency operating procedures also had contingencies for a postulated loss of the CC function which directed the re-alignment of a containment spray (CS) pump to ensure adequate safety injection is maintained. This evaluation determined the issue was of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Design Margins, because Exelon did not operate and maintain equipment within design margins. Specifically, Exelon operated the CC system outside its design safety-related specification, resulting in an operating condition prohibited by TS [H.6]. (Section 1R04)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Risk Management Action for LOCI Sequencer Maintenance
Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65(a)(4) because Exelon did not implement adequate risk management actions (RMA) during the replacement of the loss of coolant incident (LOCI) sequencer for the safety-related 11 4KV [kilovolt] bus in accordance with station procedures. The inspectors determined that Exelon's failure to establish adequate RMA's during the performance of LOCI sequencer maintenance activities in accordance with CNG-OP-4.01-1000 is a performance deficiency. Exelon's immediate corrective actions included entering this issue into their CAP as IR02444523

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it was associated with the procedure quality 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, without adequate RMAs per station procedure CNG-OP-4.01-1000, the capability of the 0C alternate alternating current (AAC) diesel generator (DG) to perform its safety function of powering the 11 4KV bus was adversely impacted. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and noted that this issue is sufficiently similar to examples 7.e and 7.f, in that, Exelon was required, under plant procedures, to establish RMAs or additional RMAs. The inspectors, with the assistance of a Region I Senior Reactor Analyst, evaluated this finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," issued on May 19, 2005. Using Appendix K, Flowchart 2, "Assessment of RMAs," the inspectors determined that the finding was of very low safety significance (Green) based upon the short duration exposure time (approximately one hour). Specifically, comparing the licensee's calculated Yellow (1E-5) annualized risk for this maintenance evolution to the actual (1E-4/year X 1 year/8760 hours = 1E-8) incremental risk increase places the risk of this finding below the Incremental Core Damage Probability (ICDP) > 1E-6 threshold, resulting in a very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, Exelon failed to adequately plan, control, and execute the LOCI sequencer maintenance activity by establishing adequate RMAs that would have provided alternate success paths for maintaining the safety function of the out of service structures, systems, and components (SSCs) [H.5]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Spent Fuel Pool Cask Handling Crane 10 CFR 50.65(a)(2) Performance Not Met
•Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), because Exelon did not adequately demonstrate that the spent fuel pool cask handling crane (SFPCHC) (a)(2) performance was effectively controlled through performance of appropriate preventative maintenance. Specifically, Exelon did not identify and properly account for a maintenance rule functional failure (MRFF) of the SFPCHC in September 2013, and thereby did not recognize that the crane exceeded its performance criteria and required a Maintenance Rule (a)(1) determination. Exelon entered this issue in the corrective action program (CAP) as incident report (IR) 02422876. Exelon's immediate corrective actions were to reclassify the September 2013 failure as a MRFF and conduct a Maintenance Rule (a)(1) determination on the SFPCHC.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the finding is more than minor because it is associated with the structure, system, and component (SSC) performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, following the MRFF of the SFPCHC in October 2014, Exelon personnel did not identify that the crane required a Maintenance Rule (a)(1) determination, to establish if the crane should be monitored in accordance with 10 CFR 50.65(a)(1). As a result, an excessive amount of time passed for Exelon to comply with the requirements of the Maintenance Rule. In accordance with IMC 0609.04, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, "Barrier Integrity Screening Questions," issued on June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in handling errors, dropped storage cask, or crane operations over the spent fuel pool that caused mechanical damage to fuel clad and a detectible release of radionuclides. The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Exelon did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Exelon personnel failed to properly evaluate the issue that occurred in September 4, 2013 as a MRFF [P.2]. (Section 1R12)

Inspection Report# : 2014005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Properly Ship Category 2 Radioactive Material - Quantity of Concern
•Green. The inspectors identified a Green NCV of 10 CFR 71.5, "Transportation of Licensed Material," and CFR 172, Subpart I, "Safety and Security Plans." Specifically, Exelon personnel shipped a Category 2 radioactive material quantity of concern (RAM-QC) on public highways to a waste processor without adhering to a transportation security plan. Prior to shipment, Exelon's staff failed to recognize that the quantity of radioactive material met the definition RAM-QC. The inspectors determined that Exelon's failure to ship material as a Category 2 RAM-QC was a performance deficiency. Exelon entered this issue into their CAP as IR02481678 and corrective actions included revising the shipping procedure to reflect the appropriate Department of Transportation requirements for shipment of Category 2 radioactive material. Additionally, Exelon implemented a formal process for reviewing pending regulatory changes for impacts to operations and support activities by the implementation of Exelon Procedure LS-AA-110, "Commitment Management," Revision 10, in September 2014.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure 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. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," issued on February 12, 2008, the inspectors determined the finding to be of very low safety significance (Green) because Exelon had an issue involving transportation of radioactive material, but it did not involve: (1) a radiation limit that was exceeded; (2) a breach of package during transport; (3) a certificate of compliance issue; (4) a low level burial ground nonconformance; or (5) a failure to make notifications or provide emergency information. The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance because Exelon successfully implemented its transportation security plan in shipping three Category 2 RAM-QC packages in 2014. (Section 2RS8)

Inspection Report# : 2015002 *(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

Calvert Cliffs 1
4Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for the Control of Hazard Barriers During Maintenance
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to implement procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 1, "Administrative Procedures," during replacement of the 11 service water (SRW) pump motor, resulting in the SRW pump room door, a high energy line break (HELB) barrier, being impaired. This rendered the safety-related equipment protected by the HELB barrier inoperable. The inspectors determined that the failure to properly implement Exelon procedures EN-1-135, "Control of Barriers," Revision 00202, and CC-AA-201, "Plant Barrier Control Program," Revision 11, was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their corrective action program (CAP) as issue report (IR) 2586773. Exelon's immediate corrective actions included halting of impairing hazard barriers without considering the degraded barrier's effect on equipment operability.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the performance deficiency was more than minor because it adversely affected the equipment performance 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. Specifically, Exelon's actions in blocking open the HELB barrier resulted in a condition where structures, systems, and components (SSCs) necessary to mitigate the effects of a HELB may not have functioned as required; therefore, the reliability of these protected SSCs was adversely impacted. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of the SRW system. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation using an exposure interval of 10 minutes as the maximum time the condition was allowed in the plant. Using these inputs yielded an initiating event frequency of 4E-9/year. From discussions with the inspectors, the analyst confirmed a list of affected equipment. The analyst bounded the scenario by assuming all mitigating equipment would be lost which gave a maximum change in core damage frequency of 4E-9/year. Since the bounded change in core damage frequency was less than 1E-6, the finding was determined to be of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, Exelon's process for planning and controlling maintenance did not identify the applicability of Exelon procedure CC-AA-201. [H.5] (Section 1R04)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
AFAS Channel Inoperable due to Valve Miss-position
•Green. The inspectors documented a self-revealing Green NCV of TS 5.4.1.a for Exelon's failure to implement procedures as required by RG 1.33, Appendix A, Section 8, "Procedures for Control of Metering and Testing Equipment and for Surveillance Tests, Procedures, and Calibrations," during maintenance which resulted in a manual isolation valve (1HVFW-1804) being incorrectly placed in the closed position. This human performance error isolated the number 12 steam generator (SG) wide range level transmitter (1LT1124C) and subsequently rendered the auxiliary feedwater actuation system (AFAS) sensor channel ZF inoperable for 33 hours and 39 minutes, a condition prohibited by TS 3.3.4, "Engineered Safety Features Actuation System (ESFAS) Instrumentation." The inspectors determined that the failure to properly implement procedure STP M-525AT-1 and place 1HVFW-1804 in its required position was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their CAP as condition report (CR)-2014-003320. Exelon's immediate corrective action was to enter TS 3.3.4.A, to determine and correct the cause, and to retest the system for proper operation.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the configuration 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. Specifically, Exelon operated with manual isolation valve, 1HVFW-1804 closed which resulted in the inoperability of the AFAS sensor channel ZF for approximately 33 hours and 39 minutes. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented an actual loss of function of at least a single train of AFAS for greater than its TS allowed outage time. A regional SRA performed a detailed risk evaluation. The finding was determined to be of very low safety significance (Green) because the redundant AFAS sensor was operable and functional to ensure actuation of the system if it had been required, therefore there was no loss of the system function. Additionally, the unit was in Mode 3 with very low decay heat levels during the time the ZF sensor channel was determined to be inoperable and plant procedures exist to manually start the AFW system if failure of automatic actuation were to occur. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Exelon did not stop when faced with an uncertain condition about the position of 1HVFW-1804. Specifically, personnel conducting the second verification did not appropriately question the position of isolation valve 1HVFW-1804 because of the higher experience level of the personnel conducting the first verification. [H.11] (Section 4OA3)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Verification of Offsite Power Operability Limit
The team identified a finding of very low safety significance involving a non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," because Exelon did not ensure the operability of offsite power in design calculations. The team found that the voltage calculation performed by Exelon used non-quantified conservatism in the calculation in order to conclude offsite power was operable; however, the team did not find conservatisms in the calculation. Additionally, the team found non-conservative assumptions in the calculation resulting in the team questioning whether offsite power was operable.

The team determined that the non-conservative assumptions, in design basis calculations used to evaluate operability limit for offsite power was a performance deficiency. Specifically, the team found the analysis to demonstrate the operability of the Class 1E AC distribution system did not verify that vital buses would remain connected to the preferred offsite power source during design basis events. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify AC Equipment Operability at Design Loading and Voltage Levels
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Exelon failed to verify, in design basis calculations, that all required Class 1E AC components would perform their safety functions during design basis events. Specifically, the team found multiple examples where Exelon failed to ensure AC equipment operability and functionality at maximum postulated loading levels and minimum allowable voltage levels.

The team determined that the failure to verify that all required Class 1E AC components would perform their safety functions during design basis events was a performance deficiency. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control, 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Oct 09, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Untimely Actions to Test or Inspect DFO Check Valves Relied on for Safety
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not assure that conditions adverse to quality were

promptly corrected. Specifically, from November 2012, until October 28, 2015, Exelon did not ensure that diesel fuel oil (DFO) transfer system header check valves DFO-146 and DFO-148 were properly tested or inspected to ensure they would perform their safety function. This issue was previously documented as a NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in inspection report 05000317, 318/2013003.

The inspectors determined that not promptly correcting a condition adverse to quality previously documented in an NCV was a performance deficiency that was within Exelon's ability to foresee and prevent. This finding is more than minor because it is associated with the protection against external factors 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, the safety function of DFO-146 and DFO-148, to close on the failure of a fuel oil storage tank to prevent draining the unaffected tank had never been verified though test or inspection since initial plant construction; therefore, reasonable doubt exists whether the valves remained capable of performing that function. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance Procedure Adherence because Exelon staff did not follow station processes, procedures, and work instructions. Specifically, Exelon staff did not ensure corrective action due date extensions and cancellations were justified, evaluated for adverse consequences, and presented to the Management Review Committee (MRC) as required by station procedures. As a result, corrective actions to restore compliance were not completed in a timely manner. [H.8]

Inspection Report# : 2015010 *(pdf)*

Significance:  Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish and Maintain Procedures for the Operation of the Diesel Fuel Oil System
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to adequately establish and maintain procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 3, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems." The inspectors determined that Exelon's failure to adequately establish and maintain a procedure for the operation of the diesel fuel oil (DFO) supply system was a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as issue report (IR) 02541107. Exelon's immediate corrective actions included halting of opening of 0-DFO-108, 21 Fuel Oil Storage Tank (FOST) to Auxiliary Boilers Isolation, and initiating an evaluation to determine the seismic adequacy of the piping downstream of 0-DFO-108.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, the failure to adequately establish and maintain procedure Operating Instruction (OI)-21D, "Fuel Oil Storage and Supply," Revision 10, for the operation of the DFO supply system resulted in the alignment of the safety-related 21 FOST to non-safety-related/non-seismically qualified piping thus rendering the 21 FOST inoperable. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," and Exhibit 4, "External Events Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the loss of the 21 FOST would degrade two or more trains of a

multi-train system or function. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because Exelon failed to adequately evaluate relevant external operating experience. Specifically, Exelon failed to evaluate for systems where non-seismically qualified piping could be connected to safety-related tanks as was described in Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks." [P.5]. (Section 1R15)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Maintenance Instructions for Replacement of the Units 1 and 2 Containment Air Cooler Starters
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 containment air coolers (CAC) starters and contactors were replaced during plant modifications. The starter and contactors with associated mechanical interlocks and auxiliary contacts provide the necessary electrical coordination to shift the CACs from fast to slow speed during a safety injection actuation signal (SIAS). The starter and contactor replacements occurred from July 2002 to July 2004. The inspectors determined that Exelon's failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 CAC starters and contactors were replaced during plant modifications is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02408755, completed an apparent cause evaluation (ACE), and completed corrective action work orders (WO) to adjust all associated starters and contactors auxiliary contacts.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the Mitigating Systems cornerstone attribute of design control 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 evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, "Mitigating Systems Screenings Questions," issued on June 19, 2012, and determined a detailed risk evaluation was required for the actual loss of function of the 13 CAC for greater than its technical specification (TS) allowed outage time. A regional Senior Reactor Analyst performed a detailed risk evaluation using the Calvert Cliffs Standardized Plant Analysis Risk (SPAR) Model for Calvert Cliffs Unit 1, Version 8.27, for internal events and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance. (Section 4OA2.1)

Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Component Cooling Operated in Unanalyzed Condition
Green: The inspectors identified a Green NCV of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.5, "Component Cooling (CC) System," and 3.0.3, because Exelon operated Units 1 and 2 CC systems in an unanalyzed condition on 18 occasions and operated in a condition prohibited by TS on two occasions within the last three years. The inspectors determined that Exelon's operation with both CC loops inoperable and the subsequent

failure to place the unit in Mode 5 within 37 hours as required by TS is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02439913. Exelon's immediate corrective actions included the submission of event notification (EN) 50752 and prohibiting operation of the CC system in a configuration outside of that specified in the TS bases while further analysis was conducted.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the configuration 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, the station operated with two CC loops unable to perform their safety function of maintaining component cooling heat exchanger (CCHX) outlet temperatures at or below 120°F. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of a system and/or function. The detailed risk evaluation considered that the deficiency could have, under some ultimate heat sink temperature conditions, resulted in the CCHX outlet temperatures exceeding the design analyzed limit of 120°F following the recirculation actuation signal (RAS) during a loss of coolant accident (LOCA). The Senior Reactor Analyst performed a bounding significance determination by conservatively assuming a complete loss of safety function for the CCHXs for the applicable limited exposure time. Emergency operating procedures also had contingencies for a postulated loss of the CC function which directed the re-alignment of a containment spray (CS) pump to ensure adequate safety injection is maintained. This evaluation determined the issue was of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Design Margins, because Exelon did not operate and maintain equipment within design margins. Specifically, Exelon operated the CC system outside its design safety-related specification, resulting in an operating condition prohibited by TS [H.6]. (Section 1R04)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Risk Management Action for LOCI Sequencer Maintenance
Green: The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65(a)(4) because Exelon did not implement adequate risk management actions (RMA) during the replacement of the loss of coolant incident (LOCI) sequencer for the safety-related 11 4KV [kilovolt] bus in accordance with station procedures. The inspectors determined that Exelon's failure to establish adequate RMA's during the performance of LOCI sequencer maintenance activities in accordance with CNG-OP-4.01-1000 is a performance deficiency. Exelon's immediate corrective actions included entering this issue into their CAP as IR02444523

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it was associated with the procedure quality 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, without adequate RMAs per station procedure CNG-OP-4.01-1000, the capability of the 0C alternate alternating current (AAC) diesel generator (DG) to perform its safety function of powering the 11 4KV bus was adversely impacted. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and noted that this issue is sufficiently similar to examples 7.e and 7.f, in that, Exelon was required, under plant procedures, to establish RMAs or additional RMAs. The inspectors, with the assistance of a Region I Senior Reactor Analyst, evaluated this finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," issued on May 19, 2005. Using Appendix K, Flowchart 2, "Assessment of RMAs," the inspectors determined that the finding was of very low safety

significance (Green) based upon the short duration exposure time (approximately one hour). Specifically, comparing the licensee's calculated Yellow (1E-5) annualized risk for this maintenance evolution to the actual (1E-4/year X 1 year/8760 hours = 1E-8) incremental risk increase places the risk of this finding below the Incremental Core Damage Probability (ICDP) > 1E-6 threshold, resulting in a very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, Exelon failed to adequately plan, control, and execute the LOCI sequencer maintenance activity by establishing adequate RMAs that would have provided alternate success paths for maintaining the safety function of the out of service structures, systems, and components (SSCs) [H.5]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Properly Ship Category 2 Radioactive Material - Quantity of Concern
•Green. The inspectors identified a Green NCV of 10 CFR 71.5, "Transportation of Licensed Material," and CFR 172, Subpart I, "Safety and Security Plans." Specifically, Exelon personnel shipped a Category 2 radioactive material quantity of concern (RAM-QC) on public highways to a waste processor without adhering to a transportation security plan. Prior to shipment, Exelon's staff failed to recognize that the quantity of radioactive material met the definition RAM-QC. The inspectors determined that Exelon's failure to ship material as a Category 2 RAM-QC was a performance deficiency. Exelon entered this issue into their CAP as IR02481678 and corrective actions included revising the shipping procedure to reflect the appropriate Department of Transportation requirements for shipment of Category 2 radioactive material. Additionally, Exelon implemented a formal process for reviewing pending regulatory changes for impacts to operations and support activities by the implementation of Exelon Procedure LS-AA-110, "Commitment Management," Revision 10, in September 2014.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure 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. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," issued on February 12, 2008, the inspectors determined the finding to be of very low safety significance (Green) because Exelon had an issue involving transportation of radioactive material, but it did not involve: (1) a radiation limit that was exceeded; (2) a breach of package during transport; (3) a certificate of compliance issue; (4) a low level burial ground nonconformance; or (5) a failure to make notifications or provide emergency information. The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance because Exelon successfully implemented its transportation security plan in shipping three Category 2 RAM-QC packages in 2014. (Section 2RS8)

Inspection Report# : 2015002 *(pdf)*

Security

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

Miscellaneous

Significance: N/A Oct 09, 2015
Identified By: NRC
Item Type: FIN Finding
Biennel PI&R Overall Assessment
The inspectors concluded that Exelon Generating Company, LLC (Exelon) was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the CAP in a timely manner. However, the inspectors identified one violation of NRC requirements in the area of timely and effective corrective actions.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs' operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and Employee Concerns Program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2015010 *(pdf)*

Last modified : March 01, 2016

Calvert Cliffs 1
1Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for the Control of Hazard Barriers During Maintenance
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to implement procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 1, "Administrative Procedures," during replacement of the 11 service water (SRW) pump motor, resulting in the SRW pump room door, a high energy line break (HELB) barrier, being impaired. This rendered the safety-related equipment protected by the HELB barrier inoperable. The inspectors determined that the failure to properly implement Exelon procedures EN-1-135, "Control of Barriers," Revision 00202, and CC-AA-201, "Plant Barrier Control Program," Revision 11, was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their corrective action program (CAP) as issue report (IR) 2586773. Exelon's immediate corrective actions included halting of impairing hazard barriers without considering the degraded barrier's effect on equipment operability.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the performance deficiency was more than minor because it adversely affected the equipment performance 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. Specifically, Exelon's actions in blocking open the HELB barrier resulted in a condition where structures, systems, and components (SSCs) necessary to mitigate the effects of a HELB may not have functioned as required; therefore, the reliability of these protected SSCs was adversely impacted. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of the SRW system. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation using an exposure interval of 10 minutes as the maximum time the condition was allowed in the plant. Using these inputs yielded an initiating event frequency of 4E-9/year. From discussions with the inspectors, the analyst confirmed a list of affected equipment. The analyst bounded the scenario by assuming all mitigating equipment would be lost which gave a maximum change in core damage frequency of 4E-9/year. Since the bounded change in core damage frequency was less than 1E-6, the finding was determined to be of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, Exelon's process for planning and controlling maintenance did not identify the applicability of Exelon procedure CC-AA-201. [H.5] (Section 1R04)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
AFAS Channel Inoperable due to Valve Miss-position
•Green. The inspectors documented a self-revealing Green NCV of TS 5.4.1.a for Exelon's failure to implement procedures as required by RG 1.33, Appendix A, Section 8, "Procedures for Control of Metering and Testing Equipment and for Surveillance Tests, Procedures, and Calibrations," during maintenance which resulted in a manual isolation valve (1HVFW-1804) being incorrectly placed in the closed position. This human performance error isolated the number 12 steam generator (SG) wide range level transmitter (1LT1124C) and subsequently rendered the auxiliary feedwater actuation system (AFAS) sensor channel ZF inoperable for 33 hours and 39 minutes, a condition prohibited by TS 3.3.4, "Engineered Safety Features Actuation System (ESFAS) Instrumentation." The inspectors determined that the failure to properly implement procedure STP M-525AT-1 and place 1HVFW-1804 in its required position was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their CAP as condition report (CR)-2014-003320. Exelon's immediate corrective action was to enter TS 3.3.4.A, to determine and correct the cause, and to retest the system for proper operation.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the configuration 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. Specifically, Exelon operated with manual isolation valve, 1HVFW-1804 closed which resulted in the inoperability of the AFAS sensor channel ZF for approximately 33 hours and 39 minutes. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented an actual loss of function of at least a single train of AFAS for greater than its TS allowed outage time. A regional SRA performed a detailed risk evaluation. The finding was determined to be of very low safety significance (Green) because the redundant AFAS sensor was operable and functional to ensure actuation of the system if it had been required, therefore there was no loss of the system function. Additionally, the unit was in Mode 3 with very low decay heat levels during the time the ZF sensor channel was determined to be inoperable and plant procedures exist to manually start the AFW system if failure of automatic actuation were to occur. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Exelon did not stop when faced with an uncertain condition about the position of 1HVFW-1804. Specifically, personnel conducting the second verification did not appropriately question the position of isolation valve 1HVFW-1804 because of the higher experience level of the personnel conducting the first verification. [H.11] (Section 4OA3)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Verification of Offsite Power Operability Limit
The team identified a finding of very low safety significance involving a non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," because Exelon did not ensure the operability of offsite power in design calculations. The team found that the voltage calculation performed by Exelon used non-quantified conservatism in the calculation in order to conclude offsite power was operable; however, the team did not find conservatisms in the calculation. Additionally, the team found non-conservative assumptions in the calculation resulting in the team questioning whether offsite power was operable.

The team determined that the non-conservative assumptions, in design basis calculations used to evaluate operability limit for offsite power was a performance deficiency. Specifically, the team found the analysis to demonstrate the operability of the Class 1E AC distribution system did not verify that vital buses would remain connected to the preferred offsite power source during design basis events. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify AC Equipment Operability at Design Loading and Voltage Levels
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Exelon failed to verify, in design basis calculations, that all required Class 1E AC components would perform their safety functions during design basis events. Specifically, the team found multiple examples where Exelon failed to ensure AC equipment operability and functionality at maximum postulated loading levels and minimum allowable voltage levels.

The team determined that the failure to verify that all required Class 1E AC components would perform their safety functions during design basis events was a performance deficiency. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control, 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Oct 09, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Untimely Actions to Test or Inspect DFO Check Valves Relied on for Safety
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not assure that conditions adverse to quality were

promptly corrected. Specifically, from November 2012, until October 28, 2015, Exelon did not ensure that diesel fuel oil (DFO) transfer system header check valves DFO-146 and DFO-148 were properly tested or inspected to ensure they would perform their safety function. This issue was previously documented as a NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in inspection report 05000317, 318/2013003.

The inspectors determined that not promptly correcting a condition adverse to quality previously documented in an NCV was a performance deficiency that was within Exelon's ability to foresee and prevent. This finding is more than minor because it is associated with the protection against external factors 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, the safety function of DFO-146 and DFO-148, to close on the failure of a fuel oil storage tank to prevent draining the unaffected tank had never been verified though test or inspection since initial plant construction; therefore, reasonable doubt exists whether the valves remained capable of performing that function. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance Procedure Adherence because Exelon staff did not follow station processes, procedures, and work instructions. Specifically, Exelon staff did not ensure corrective action due date extensions and cancellations were justified, evaluated for adverse consequences, and presented to the Management Review Committee (MRC) as required by station procedures. As a result, corrective actions to restore compliance were not completed in a timely manner. [H.8]

Inspection Report# : 2015010 *(pdf)*

Significance:  Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish and Maintain Procedures for the Operation of the Diesel Fuel Oil System
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to adequately establish and maintain procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 3, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems." The inspectors determined that Exelon's failure to adequately establish and maintain a procedure for the operation of the diesel fuel oil (DFO) supply system was a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as issue report (IR) 02541107. Exelon's immediate corrective actions included halting of opening of 0-DFO-108, 21 Fuel Oil Storage Tank (FOST) to Auxiliary Boilers Isolation, and initiating an evaluation to determine the seismic adequacy of the piping downstream of 0-DFO-108.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, the failure to adequately establish and maintain procedure Operating Instruction (OI)-21D, "Fuel Oil Storage and Supply," Revision 10, for the operation of the DFO supply system resulted in the alignment of the safety-related 21 FOST to non-safety-related/non-seismically qualified piping thus rendering the 21 FOST inoperable. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," and Exhibit 4, "External Events Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the loss of the 21 FOST would degrade two or more trains of a

multi-train system or function. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because Exelon failed to adequately evaluate relevant external operating experience. Specifically, Exelon failed to evaluate for systems where non-seismically qualified piping could be connected to safety-related tanks as was described in Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks." [P.5]. (Section 1R15)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Maintenance Instructions for Replacement of the Units 1 and 2 Containment Air Cooler Starters
•Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 containment air coolers (CAC) starters and contactors were replaced during plant modifications. The starter and contactors with associated mechanical interlocks and auxiliary contacts provide the necessary electrical coordination to shift the CACs from fast to slow speed during a safety injection actuation signal (SIAS). The starter and contactor replacements occurred from July 2002 to July 2004. The inspectors determined that Exelon's failure to include appropriate quantitative acceptance criteria for determining the auxiliary contacts and mechanical interlocks were properly installed and adjusted when the Units 1 and 2 CAC starters and contactors were replaced during plant modifications is a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as IR02408755, completed an apparent cause evaluation (ACE), and completed corrective action work orders (WO) to adjust all associated starters and contactors auxiliary contacts.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it is associated with the Mitigating Systems cornerstone attribute of design control 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 evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings At Power," Exhibit 2, "Mitigating Systems Screenings Questions," issued on June 19, 2012, and determined a detailed risk evaluation was required for the actual loss of function of the 13 CAC for greater than its technical specification (TS) allowed outage time. A regional Senior Reactor Analyst performed a detailed risk evaluation using the Calvert Cliffs Standardized Plant Analysis Risk (SPAR) Model for Calvert Cliffs Unit 1, Version 8.27, for internal events and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance. (Section 4OA2.1)

Inspection Report# : 2015002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Properly Ship Category 2 Radioactive Material - Quantity of Concern
•Green. The inspectors identified a Green NCV of 10 CFR 71.5, “Transportation of Licensed Material,” and CFR 172, Subpart I, “Safety and Security Plans.” Specifically, Exelon personnel shipped a Category 2 radioactive material quantity of concern (RAM-QC) on public highways to a waste processor without adhering to a transportation security plan. Prior to shipment, Exelon’s staff failed to recognize that the quantity of radioactive material met the definition RAM-QC. The inspectors determined that Exelon’s failure to ship material as a Category 2 RAM-QC was a performance deficiency. Exelon entered this issue into their CAP as IR02481678 and corrective actions included revising the shipping procedure to reflect the appropriate Department of Transportation requirements for shipment of Category 2 radioactive material. Additionally, Exelon implemented a formal process for reviewing pending regulatory changes for impacts to operations and support activities by the implementation of Exelon Procedure LS-AA-110, “Commitment Management,” Revision 10, in September 2014.

The inspectors reviewed IMC 0612, Appendix B, “Issue Screening,” and determined the issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure 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. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," issued on February 12, 2008, the inspectors determined the finding to be of very low safety significance (Green) because Exelon had an issue involving transportation of radioactive material, but it did not involve: (1) a radiation limit that was exceeded; (2) a breach of package during transport; (3) a certificate of compliance issue; (4) a low level burial ground nonconformance; or (5) a failure to make notifications or provide emergency information. The inspectors determined that the finding did not have a cross-cutting aspect because the issue was not indicative of current licensee performance because Exelon successfully implemented its transportation security plan in shipping three Category 2 RAM-QC packages in 2014. (Section 2RS8)

Inspection Report# : 2015002 *(pdf)*

Security

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

Miscellaneous

Significance: N/A Oct 09, 2015
Identified By: NRC
Item Type: FIN Finding
Biennel PI&R Overall Assessment
The inspectors concluded that Exelon Generating Company, LLC (Exelon) was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the CAP in a timely manner. However, the inspectors identified one violation of NRC requirements in the area of timely and effective corrective actions.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs' operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and Employee Concerns Program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2015010 *(pdf)*

Last modified : July 11, 2016

Calvert Cliffs 1
2Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Scaffolding Impairs Fire Sprinkler Systems in Safety Related Fire Areas
• Green. The inspectors identified a Green, NCV of CCNPP Renewed Facility Operating License for Units One and Two, paragraph 2.E for Exelon's failure to maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report (UFSAR). Specifically, Exelon installed scaffolding in safety related areas not in accordance with approved procedures and, therefore, impaired fire sprinkler systems that were required by the approved fire protection program without establishing approved contingency measures. The inspectors determined that Exelon's impairment of fire sprinkler systems by installing scaffolding with dimensions exceeding those approved in Exelon procedure MA-AA-716-025 was a performance deficiency that was within Exelon's ability to foresee and prevent. The performance deficiency led to the violation of CCNPP Renewed Facility Operating License, paragraph 2.E, because Exelon failed to maintain in effect all provisions of the approved fire protection program. Exelon's immediate corrective actions included stationing continuous fire watches and removal of the scaffolding deck boards which were impairing the fire sprinkler systems. Exelon entered these issues in to their corrective action program (CAP) as issue reports (IR): 02642463, 02642549, 02642844, 02644495, 02647104, 02647454, and 02647455.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, Exelon installed scaffolding that exceeded the allowed dimensions in MA-AA-716-025 and impaired the function of fire sprinkler systems in areas containing safety related equipment. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix F, "The Fire Protection SDP Worksheet" issued on September 20, 2013 and determined the finding to be of very low safety significance (Green) because, in all cases of impairment, the fire sprinkler systems were still capable of protecting their intended targets or were still capable to suppress fires such that no additional equipment important to safety would have been affected. The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon failed to properly implement procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 11, which limits scaffolding dimensions and locations when installing scaffolding in safety related areas. [H.8] (Section 1R05)

Inspection Report# : 2016002 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for the Control of Hazard Barriers During Maintenance
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to implement procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 1, "Administrative Procedures," during replacement of the 11 service water (SRW) pump motor, resulting in the SRW pump room door, a high energy line break (HELB) barrier, being impaired. This rendered the safety-related equipment protected by the HELB barrier inoperable. The inspectors determined that the failure to properly implement Exelon procedures EN-1-135, "Control of Barriers," Revision 00202, and CC-AA-201, "Plant Barrier Control Program," Revision 11, was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their corrective action program (CAP) as issue report (IR) 2586773. Exelon's immediate corrective actions included halting of impairing hazard barriers without considering the degraded barrier's effect on equipment operability.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the performance deficiency was more than minor because it adversely affected the equipment performance 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. Specifically, Exelon's actions in blocking open the HELB barrier resulted in a condition where structures, systems, and components (SSCs) necessary to mitigate the effects of a HELB may not have functioned as required; therefore, the reliability of these protected SSCs was adversely impacted. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of the SRW system. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation using an exposure interval of 10 minutes as the maximum time the condition was allowed in the plant. Using these inputs yielded an initiating event frequency of 4E-9/year. From discussions with the inspectors, the analyst confirmed a list of affected equipment. The analyst bounded the scenario by assuming all mitigating equipment would be lost which gave a maximum change in core damage frequency of 4E-9/year. Since the bounded change in core damage frequency was less than 1E-6, the finding was determined to be of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, Exelon's process for planning and controlling maintenance did not identify the applicability of Exelon procedure CC-AA-201. [H.5] (Section 1R04)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
AFAS Channel Inoperable due to Valve Miss-position
•Green. The inspectors documented a self-revealing Green NCV of TS 5.4.1.a for Exelon's failure to implement procedures as required by RG 1.33, Appendix A, Section 8, "Procedures for Control of Metering and Testing Equipment and for Surveillance Tests, Procedures, and Calibrations," during maintenance which resulted in a manual isolation valve (1HVFW-1804) being incorrectly placed in the closed position. This human performance error isolated the number 12 steam generator (SG) wide range level transmitter (1LT1124C) and subsequently rendered the auxiliary feedwater actuation system (AFAS) sensor channel ZF inoperable for 33 hours and 39 minutes, a condition prohibited by TS 3.3.4, "Engineered Safety Features Actuation System (ESFAS) Instrumentation." The inspectors

determined that the failure to properly implement procedure STP M-525AT-1 and place 1HVFW-1804 in its required position was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their CAP as condition report (CR)-2014-003320. Exelon's immediate corrective action was to enter TS 3.3.4.A, to determine and correct the cause, and to retest the system for proper operation.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the configuration 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. Specifically, Exelon operated with manual isolation valve, 1HVFW-1804 closed which resulted in the inoperability of the AFAS sensor channel ZF for approximately 33 hours and 39 minutes. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented an actual loss of function of at least a single train of AFAS for greater than its TS allowed outage time. A regional SRA performed a detailed risk evaluation. The finding was determined to be of very low safety significance (Green) because the redundant AFAS sensor was operable and functional to ensure actuation of the system if it had been required, therefore there was no loss of the system function. Additionally, the unit was in Mode 3 with very low decay heat levels during the time the ZF sensor channel was determined to be inoperable and plant procedures exist to manually start the AFW system if failure of automatic actuation were to occur. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Exelon did not stop when faced with an uncertain condition about the position of 1HVFW-1804. Specifically, personnel conducting the second verification did not appropriately question the position of isolation valve 1HVFW-1804 because of the higher experience level of the personnel conducting the first verification. [H.11] (Section 4OA3)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Verification of Offsite Power Operability Limit
The team identified a finding of very low safety significance involving a non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," because Exelon did not ensure the operability of offsite power in design calculations. The team found that the voltage calculation performed by Exelon used non-quantified conservatism in the calculation in order to conclude offsite power was operable; however, the team did not find conservatisms in the calculation. Additionally, the team found non-conservative assumptions in the calculation resulting in the team questioning whether offsite power was operable.

The team determined that the non-conservative assumptions, in design basis calculations used to evaluate operability limit for offsite power was a performance deficiency. Specifically, the team found the analysis to demonstrate the operability of the Class 1E AC distribution system did not verify that vital buses would remain connected to the preferred offsite power source during design basis events. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding

was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify AC Equipment Operability at Design Loading and Voltage Levels
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Exelon failed to verify, in design basis calculations, that all required Class 1E AC components would perform their safety functions during design basis events. Specifically, the team found multiple examples where Exelon failed to ensure AC equipment operability and functionality at maximum postulated loading levels and minimum allowable voltage levels.

The team determined that the failure to verify that all required Class 1E AC components would perform their safety functions during design basis events was a performance deficiency. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control, 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Oct 09, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Untimely Actions to Test or Inspect DFO Check Valves Relied on for Safety
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not assure that conditions adverse to quality were promptly corrected. Specifically, from November 2012, until October 28, 2015, Exelon did not ensure that diesel fuel oil (DFO) transfer system header check valves DFO-146 and DFO-148 were properly tested or inspected to ensure they would perform their safety function. This issue was previously documented as a NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in inspection report 05000317, 318/2013003.

The inspectors determined that not promptly correcting a condition adverse to quality previously documented in an NCV was a performance deficiency that was within Exelon's ability to foresee and prevent. This finding is more than minor because it is associated with the protection against external factors 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, the safety function of DFO-146 and DFO-148, to close on the failure of a fuel oil storage tank to prevent draining the unaffected tank had never been verified though test or inspection since initial plant construction; therefore, reasonable doubt exists whether the valves remained

capable of performing that function. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance Procedure Adherence because Exelon staff did not follow station processes, procedures, and work instructions. Specifically, Exelon staff did not ensure corrective action due date extensions and cancellations were justified, evaluated for adverse consequences, and presented to the Management Review Committee (MRC) as required by station procedures. As a result, corrective actions to restore compliance were not completed in a timely manner. [H.8]

Inspection Report# : 2015010 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish and Maintain Procedures for the Operation of the Diesel Fuel Oil System
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to adequately establish and maintain procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 3, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems." The inspectors determined that Exelon's failure to adequately establish and maintain a procedure for the operation of the diesel fuel oil (DFO) supply system was a performance deficiency. Exelon entered this issue into their corrective action program (CAP) as issue report (IR) 02541107. Exelon's immediate corrective actions included halting of opening of 0-DFO-108, 21 Fuel Oil Storage Tank (FOST) to Auxiliary Boilers Isolation, and initiating an evaluation to determine the seismic adequacy of the piping downstream of 0-DFO-108.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, the failure to adequately establish and maintain procedure Operating Instruction (OI)-21D, "Fuel Oil Storage and Supply," Revision 10, for the operation of the DFO supply system resulted in the alignment of the safety-related 21 FOST to non-safety-related/non-seismically qualified piping thus rendering the 21 FOST inoperable. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," and Exhibit 4, "External Events Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the loss of the 21 FOST would degrade two or more trains of a multi-train system or function. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determined the finding to be of very low safety significance (Green). The inspectors determined that the finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because Exelon failed to adequately evaluate relevant external operating experience. Specifically, Exelon failed to evaluate for systems where non-seismically qualified piping could be connected to safety-related tanks as was described in Information Notice (IN) 2012-01, "Seismic Considerations – Principally Issues Involving Tanks." [P.5]. (Section 1R15)

Inspection Report# : 2015003 *(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: N/A Oct 09, 2015
Identified By: NRC
Item Type: FIN Finding
Biennel PI&R Overall Assessment
The inspectors concluded that Exelon Generating Company, LLC (Exelon) was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the CAP in a timely manner. However, the inspectors identified one violation of NRC requirements in the area of timely and effective corrective actions.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs' operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and Employee Concerns Program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could

have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2015010 *(pdf)*

Last modified : August 29, 2016

Calvert Cliffs 1
3Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Scaffolding Impairs Fire Sprinkler Systems in Safety Related Fire Areas
• Green. The inspectors identified a Green, NCV of CCNPP Renewed Facility Operating License for Units One and Two, paragraph 2.E for Exelon's failure to maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report (UFSAR). Specifically, Exelon installed scaffolding in safety related areas not in accordance with approved procedures and, therefore, impaired fire sprinkler systems that were required by the approved fire protection program without establishing approved contingency measures. The inspectors determined that Exelon's impairment of fire sprinkler systems by installing scaffolding with dimensions exceeding those approved in Exelon procedure MA-AA-716-025 was a performance deficiency that was within Exelon's ability to foresee and prevent. The performance deficiency led to the violation of CCNPP Renewed Facility Operating License, paragraph 2.E, because Exelon failed to maintain in effect all provisions of the approved fire protection program. Exelon's immediate corrective actions included stationing continuous fire watches and removal of the scaffolding deck boards which were impairing the fire sprinkler systems. Exelon entered these issues in to their corrective action program (CAP) as issue reports (IR): 02642463, 02642549, 02642844, 02644495, 02647104, 02647454, and 02647455.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, Exelon installed scaffolding that exceeded the allowed dimensions in MA-AA-716-025 and impaired the function of fire sprinkler systems in areas containing safety related equipment. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix F, "The Fire Protection SDP Worksheet" issued on September 20, 2013 and determined the finding to be of very low safety significance (Green) because, in all cases of impairment, the fire sprinkler systems were still capable of protecting their intended targets or were still capable to suppress fires such that no additional equipment important to safety would have been affected. The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon failed to properly implement procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 11, which limits scaffolding dimensions and locations when installing scaffolding in safety related areas. [H.8] (Section 1R05)

Inspection Report# : 2016002 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for the Control of Hazard Barriers During Maintenance
•Green. The inspectors identified a Green NCV of Technical Specification (TS) 5.4.1.a for Exelon's failure to implement procedures as required by Regulatory Guide (RG) 1.33, Appendix A, Section 1, "Administrative Procedures," during replacement of the 11 service water (SRW) pump motor, resulting in the SRW pump room door, a high energy line break (HELB) barrier, being impaired. This rendered the safety-related equipment protected by the HELB barrier inoperable. The inspectors determined that the failure to properly implement Exelon procedures EN-1-135, "Control of Barriers," Revision 00202, and CC-AA-201, "Plant Barrier Control Program," Revision 11, was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their corrective action program (CAP) as issue report (IR) 2586773. Exelon's immediate corrective actions included halting of impairing hazard barriers without considering the degraded barrier's effect on equipment operability.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the performance deficiency was more than minor because it adversely affected the equipment performance 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. Specifically, Exelon's actions in blocking open the HELB barrier resulted in a condition where structures, systems, and components (SSCs) necessary to mitigate the effects of a HELB may not have functioned as required; therefore, the reliability of these protected SSCs was adversely impacted. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented a loss of the SRW system. A regional Senior Reactor Analyst (SRA) performed a detailed risk evaluation using an exposure interval of 10 minutes as the maximum time the condition was allowed in the plant. Using these inputs yielded an initiating event frequency of 4E-9/year. From discussions with the inspectors, the analyst confirmed a list of affected equipment. The analyst bounded the scenario by assuming all mitigating equipment would be lost which gave a maximum change in core damage frequency of 4E-9/year. Since the bounded change in core damage frequency was less than 1E-6, the finding was determined to be of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Work Management, because Exelon did not implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, Exelon's process for planning and controlling maintenance did not identify the applicability of Exelon procedure CC-AA-201. [H.5] (Section 1R04)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
AFAS Channel Inoperable due to Valve Miss-position
•Green. The inspectors documented a self-revealing Green NCV of TS 5.4.1.a for Exelon's failure to implement procedures as required by RG 1.33, Appendix A, Section 8, "Procedures for Control of Metering and Testing Equipment and for Surveillance Tests, Procedures, and Calibrations," during maintenance which resulted in a manual isolation valve (1HVFW-1804) being incorrectly placed in the closed position. This human performance error isolated the number 12 steam generator (SG) wide range level transmitter (1LT1124C) and subsequently rendered the auxiliary feedwater actuation system (AFAS) sensor channel ZF inoperable for 33 hours and 39 minutes, a condition prohibited by TS 3.3.4, "Engineered Safety Features Actuation System (ESFAS) Instrumentation." The inspectors

determined that the failure to properly implement procedure STP M-525AT-1 and place 1HVFW-1804 in its required position was a performance deficiency that was reasonably within Exelon's ability to foresee and prevent. Upon identification, Exelon staff entered this issue into their CAP as condition report (CR)-2014-003320. Exelon's immediate corrective action was to enter TS 3.3.4.A, to determine and correct the cause, and to retest the system for proper operation.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the configuration 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. Specifically, Exelon operated with manual isolation valve, 1HVFW-1804 closed which resulted in the inoperability of the AFAS sensor channel ZF for approximately 33 hours and 39 minutes. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," issued on June 19, 2012, the inspectors determined that a detailed risk evaluation was necessary to disposition the significance of this finding because the finding represented an actual loss of function of at least a single train of AFAS for greater than its TS allowed outage time. A regional SRA performed a detailed risk evaluation. The finding was determined to be of very low safety significance (Green) because the redundant AFAS sensor was operable and functional to ensure actuation of the system if it had been required, therefore there was no loss of the system function. Additionally, the unit was in Mode 3 with very low decay heat levels during the time the ZF sensor channel was determined to be inoperable and plant procedures exist to manually start the AFW system if failure of automatic actuation were to occur. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Exelon did not stop when faced with an uncertain condition about the position of 1HVFW-1804. Specifically, personnel conducting the second verification did not appropriately question the position of isolation valve 1HVFW-1804 because of the higher experience level of the personnel conducting the first verification. [H.11] (Section 4OA3)

Inspection Report# : 2015004 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Verification of Offsite Power Operability Limit
The team identified a finding of very low safety significance involving a non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," because Exelon did not ensure the operability of offsite power in design calculations. The team found that the voltage calculation performed by Exelon used non-quantified conservatism in the calculation in order to conclude offsite power was operable; however, the team did not find conservatisms in the calculation. Additionally, the team found non-conservative assumptions in the calculation resulting in the team questioning whether offsite power was operable.

The team determined that the non-conservative assumptions, in design basis calculations used to evaluate operability limit for offsite power was a performance deficiency. Specifically, the team found the analysis to demonstrate the operability of the Class 1E AC distribution system did not verify that vital buses would remain connected to the preferred offsite power source during design basis events. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding

was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Dec 02, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify AC Equipment Operability at Design Loading and Voltage Levels
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Exelon failed to verify, in design basis calculations, that all required Class 1E AC components would perform their safety functions during design basis events. Specifically, the team found multiple examples where Exelon failed to ensure AC equipment operability and functionality at maximum postulated loading levels and minimum allowable voltage levels.

The team determined that the failure to verify that all required Class 1E AC components would perform their safety functions during design basis events was a performance deficiency. The performance deficiency was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, Example 3j, because the failure to perform these evaluations resulted in a reasonable doubt on the operability of the offsite power supply. Additionally, the performance deficiency was associated with the Mitigating Systems Cornerstone attribute of Design Control, 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 Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding was a design deficiency that did not result in the loss of operability or functionality. The team did not identify a cross-cutting aspect with this finding because it did not represent current performance. The inadequate calculation was developed outside of the timeframe that reflected current performance.
Inspection Report# : 2015007 *(pdf)*

Significance: G Oct 09, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Untimely Actions to Test or Inspect DFO Check Valves Relied on for Safety
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not assure that conditions adverse to quality were promptly corrected. Specifically, from November 2012, until October 28, 2015, Exelon did not ensure that diesel fuel oil (DFO) transfer system header check valves DFO-146 and DFO-148 were properly tested or inspected to ensure they would perform their safety function. This issue was previously documented as a NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in inspection report 05000317, 318/2013003.

The inspectors determined that not promptly correcting a condition adverse to quality previously documented in an NCV was a performance deficiency that was within Exelon's ability to foresee and prevent. This finding is more than minor because it is associated with the protection against external factors 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, the safety function of DFO-146 and DFO-148, to close on the failure of a fuel oil storage tank to prevent draining the unaffected tank had never been verified though test or inspection since initial plant construction; therefore, reasonable doubt exists whether the valves remained

capable of performing that function. The inspectors evaluated the significance of this finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions." The inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather event. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance Procedure Adherence because Exelon staff did not follow station processes, procedures, and work instructions. Specifically, Exelon staff did not ensure corrective action due date extensions and cancellations were justified, evaluated for adverse consequences, and presented to the Management Review Committee (MRC) as required by station procedures. As a result, corrective actions to restore compliance were not completed in a timely manner. [H.8]

Inspection Report# : 2015010 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Deficient Design Control of Air Pressure Available for Unit 1 Component Cooling Water Air Operated Valves
•Green. The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," for Exelon's failure to establish measures to assure that the design basis was correctly translated into specifications affecting safety related functions of air operated valves (AOV). Specifically, when implementing a design change, Exelon failed to verify the air pressure supplied to AOVs in the component cooling (CC) water system was adequate to ensure that the valves would have performed their safety function to close during certain specific accident conditions. The inspectors determined that Exelon's failure to verify ECP-15-000213 ensured that air pressure supplied to safety related Unit 1 CC heat exchanger (HX) outlet AOVs was sufficient to support their safety function of closing during a design basis accident (DBA) was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included conducting an engineering evaluation that demonstrated the operability of the CC system in the degraded condition and increasing the air pressure supplied to the CC HX outlet valves to ensure the valves are capable of fully closing during a DBA. Exelon entered this issue into its corrective action program (CAP) as action request (AR) 02680281.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.j, in that the design analysis deficiency resulted in a condition where reasonable doubt existed regarding the operability of the Unit 1 CC HX outlet valves. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the finding did not involve an actual open pathway in the physical integrity of reactor containment. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon's AOV program, as implemented by ER AA 410, "Air Operated Valve Implementing Program," Revision 2, did not require that complete, accurate, and up-to-date documentation on the CC HX outlet valves' design be maintained. [H.7] (Section 1R15)

Inspection Report# : 2016003 *(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.

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.

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 Oct 09, 2015
Identified By: NRC
Item Type: FIN Finding
Biennel PI&R Overall Assessment
The inspectors concluded that Exelon Generating Company, LLC (Exelon) was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the CAP at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the CAP in a timely manner. However, the inspectors identified one violation of NRC requirements in the area of timely and effective corrective actions.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Calvert Cliffs' operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and Employee Concerns Program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2015010 *(pdf)*

Last modified : December 08, 2016

Calvert Cliffs 1
4Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Scaffolding Impairs Fire Sprinkler Systems in Safety Related Fire Areas
• Green. The inspectors identified a Green, NCV of CCNPP Renewed Facility Operating License for Units One and Two, paragraph 2.E for Exelon's failure to maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report (UFSAR). Specifically, Exelon installed scaffolding in safety related areas not in accordance with approved procedures and, therefore, impaired fire sprinkler systems that were required by the approved fire protection program without establishing approved contingency measures. The inspectors determined that Exelon's impairment of fire sprinkler systems by installing scaffolding with dimensions exceeding those approved in Exelon procedure MA-AA-716-025 was a performance deficiency that was within Exelon's ability to foresee and prevent. The performance deficiency led to the violation of CCNPP Renewed Facility Operating License, paragraph 2.E, because Exelon failed to maintain in effect all provisions of the approved fire protection program. Exelon's immediate corrective actions included stationing continuous fire watches and removal of the scaffolding deck boards which were impairing the fire sprinkler systems. Exelon entered these issues in to their corrective action program (CAP) as issue reports (IR): 02642463, 02642549, 02642844, 02644495, 02647104, 02647454, and 02647455.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the protection against external factors 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. Specifically, Exelon installed scaffolding that exceeded the allowed dimensions in MA-AA-716-025 and impaired the function of fire sprinkler systems in areas containing safety related equipment. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix F, "The Fire Protection SDP Worksheet" issued on September 20, 2013 and determined the finding to be of very low safety significance (Green) because, in all cases of impairment, the fire sprinkler systems were still capable of protecting their intended targets or were still capable to suppress fires such that no additional equipment important to safety would have been affected. The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon failed to properly implement procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 11, which limits scaffolding dimensions and locations when installing scaffolding in safety related areas. [H.8] (Section 1R05)

Inspection Report# : 2016002 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Deficient Design Control of Air Pressure Available for Unit 1 Component Cooling Water Air Operated Valves
•Green. The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," for Exelon's failure to establish measures to assure that the design basis was correctly translated into specifications affecting safety related functions of air operated valves (AOV). Specifically, when implementing a design change, Exelon failed to verify the air pressure supplied to AOVs in the component cooling (CC) water system was adequate to ensure that the valves would have performed their safety function to close during certain specific accident conditions. The inspectors determined that Exelon's failure to verify ECP-15-000213 ensured that air pressure supplied to safety related Unit 1 CC heat exchanger (HX) outlet AOVs was sufficient to support their safety function of closing during a design basis accident (DBA) was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included conducting an engineering evaluation that demonstrated the operability of the CC system in the degraded condition and increasing the air pressure supplied to the CC HX outlet valves to ensure the valves are capable of fully closing during a DBA. Exelon entered this issue into its corrective action program (CAP) as action request (AR) 02680281.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.j, in that the design analysis deficiency resulted in a condition where reasonable doubt existed regarding the operability of the Unit 1 CC HX outlet valves. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the finding did not involve an actual open pathway in the physical integrity of reactor containment. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon's AOV program, as implemented by ER AA 410, "Air Operated Valve Implementing Program," Revision 2, did not require that complete, accurate, and up-to-date documentation on the CC HX outlet valves' design be maintained. [H.7] (Section 1R15)

Inspection Report# : 2016003 *(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.

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.

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 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to report conditions as required per 10 CFR 50.73
•Severity Level IV. The inspectors identified a Severity Level IV, NCV of 10 CFR 50.73(a)(2) for Exelon's failure to report within 60 days of discovery, a condition that could have prevented the fulfillment of the safety function of the service water (SRW) system needed to mitigate the consequences of an accident. Additionally, Exelon failed to report within 60 days of discovery, a single condition that caused two trains of the SRW system, a system designed to mitigate the consequences of an accident, to become inoperable. Exelon entered the issue into their CAP as IR 02688409 and on July 20, 2016, submitted LER 05000317/2016-004-00, High Energy Line Break Barrier Breached Due to Human Performance Error Causing Both Service Water Trains to be Inoperable.

The inspectors determined that Exelon's failure to report a single condition that caused the inoperability of two trains of SRW and may have prevented SRW from fulfilling its design functions to mitigate the consequences of an accident within 60 days of discovering the condition was a violation of 10 CFR 50.73(a)(2), and could have impacted the regulatory process. The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and the NRC Enforcement Policy, revised February 4, 2015, and determined the violation is of SL-IV because it is most similar to example 6.9.d.9 of the NRC Enforcement Policy, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," which is a SL-IV violation. The inspectors determined that the violation did not have a cross-cutting aspect because it involved the traditional enforcement process only. (Section 4OA1)

Inspection Report# : 2016002 *(pdf)*

Last modified : February 01, 2017

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Calvert Cliffs 1 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

On this page:

Initiating Events
Mitigating Systems
Barrier Integrity

Significance: G Dec 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Inspection of Caulking, Seals, and Expansion Barriers in the Auxiliary Building
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion XVI, Corrective Action, for Exelon's failure to identify conditions adverse to quality at CCNPP. Specifically, several safety related auxiliary building caulking, seals, expansion joints, and penetration barriers were found by the inspectors or revealed themselves by water intrusion events to be degraded. The inspectors determined that Exelon's failure to identify degradation of several auxiliary building caulking, seals, and expansion joints was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included performing operability determinations on degraded barriers, and repair of the degraded barriers. Exelon entered these issues into its corrective action program (CAP) as action request (AR) 02715188, AR 02715199, AR 02716543, AR 02725901, and AR 02564655.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," issued on May 6, 2016, and determined the issue is more than minor because it adversely affected the Human Performance attribute, of the Auxiliary Building Area, of the Barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.k, in that significant programmatic deficiencies were identified that could have led to worse outcomes. Specifically, several inspection programs designed to identify degraded barriers, caulking, seals, and expansion joints in safety related auxiliary building barriers, had not been performed, or had been performed inadequately. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on October 7, 2016, and IMC 0609, Appendix A, "The Significance

Determination Process for Findings at Power" issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the only safety related degradation represented by the finding is of the radiological barrier function provided for the auxiliary building. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon did not complete the baseline inspection required by AMBD-0026 within the 10 years preceding entry of Units 1 and 2 into

their respective periods of extended operation as specified in CNG-CM-6.01. Additionally, inspections conducted under AMBD-0052, and 0-013-49-O-18M were inadequate in that they failed to identify degradation of the barriers as described above. [H.8] (Section 1R15)

Inspection Report# : 2016004 *(pdf)*

Significance: G Sep 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Deficient Design Control of Air Pressure Available for Unit 1 Component Cooling Water Air Operated Valves
Green. The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," for Exelon's failure to establish measures to assure that the design basis was correctly translated into specifications affecting safety related functions of air operated valves (AOV). Specifically, when implementing a design change, Exelon failed to verify the air pressure supplied to AOVs in the component cooling (CC) water system was adequate to ensure that the valves would have performed their safety function to close during certain specific accident conditions. The inspectors determined that Exelon's failure to verify ECP-15-000213 ensured that air pressure supplied to safety related Unit 1 CC heat exchanger (HX) outlet AOVs was sufficient to support their safety function of closing during a design basis accident (DBA) was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included conducting an engineering evaluation that demonstrated the operability of the CC system in the degraded condition and increasing the air pressure supplied to the CC HX outlet valves to ensure the valves are capable of fully closing during a DBA. Exelon entered this issue into its corrective action program (CAP) as action request (AR) 02680281.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.j, in that the design analysis deficiency resulted in a condition where reasonable doubt existed regarding the operability of the Unit 1 CC HX outlet valves. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the finding did not involve an actual open pathway in the physical integrity of reactor containment. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon's AOV program, as implemented by ER AA 410, "Air Operated Valve Implementing Program," Revision 2, did not require that complete, accurate, and up-to-date documentation on the CC HX outlet valves' design be maintained. [H.7] (Section 1R15)

Inspection Report# : 2016003 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : August 03, 2017

Page Last Reviewed/Updated Wednesday, August 10, 2016

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Calvert Cliffs 1 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Mitigating Systems

Barrier Integrity

Significance: G Dec 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Inspection of Caulking, Seals, and Expansion Barriers in the Auxiliary Building
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion XVI, Corrective Action, for Exelon's failure to identify conditions adverse to quality at CCNPP. Specifically, several safety related auxiliary building caulking, seals, expansion joints, and penetration barriers were found by the inspectors or revealed themselves by water intrusion events to be degraded. The inspectors determined that Exelon's failure to identify degradation of several auxiliary building caulking, seals, and expansion joints was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included performing operability determinations on degraded barriers, and repair of the degraded barriers. Exelon entered these issues into its corrective action program (CAP) as action request (AR) 02715188, AR 02715199, AR 02716543, AR 02725901, and AR 02564655.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," issued on May 6, 2016, and determined the issue is more than minor because it adversely affected the Human Performance attribute, of the Auxiliary Building Area, of the Barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.k, in that significant programmatic deficiencies were identified that could have led to worse outcomes. Specifically, several inspection programs designed to identify degraded barriers, caulking, seals, and expansion joints in safety related auxiliary building barriers, had not been performed, or had been performed inadequately. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on October 7, 2016, and IMC 0609, Appendix A, "The Significance

Determination Process for Findings at Power" issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the only safety related degradation represented by the finding is of the radiological barrier function provided for the auxiliary building. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon did not complete the baseline inspection required by AMBD-0026 within the 10 years preceding entry of Units 1 and 2 into

their respective periods of extended operation as specified in CNG-CM-6.01. Additionally, inspections conducted under AMBD-0052, and 0-013-49-O-18M were inadequate in that they failed to identify degradation of the barriers as described above. [H.8] (Section 1R15)

Inspection Report# : 2016004 *(pdf)*

Significance: G Sep 30, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Deficient Design Control of Air Pressure Available for Unit 1 Component Cooling Water Air Operated Valves
Green. The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," for Exelon's failure to establish measures to assure that the design basis was correctly translated into specifications affecting safety related functions of air operated valves (AOV). Specifically, when implementing a design change, Exelon failed to verify the air pressure supplied to AOVs in the component cooling (CC) water system was adequate to ensure that the valves would have performed their safety function to close during certain specific accident conditions. The inspectors determined that Exelon's failure to verify ECP-15-000213 ensured that air pressure supplied to safety related Unit 1 CC heat exchanger (HX) outlet AOVs was sufficient to support their safety function of closing during a design basis accident (DBA) was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included conducting an engineering evaluation that demonstrated the operability of the CC system in the degraded condition and increasing the air pressure supplied to the CC HX outlet valves to ensure the valves are capable of fully closing during a DBA. Exelon entered this issue into its corrective action program (CAP) as action request (AR) 02680281.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," and determined the issue is more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.j, in that the design analysis deficiency resulted in a condition where reasonable doubt existed regarding the operability of the Unit 1 CC HX outlet valves. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on June 19, 2012, and IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the finding did not involve an actual open pathway in the physical integrity of reactor containment. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon's AOV program, as implemented by ER AA 410, "Air Operated Valve Implementing Program," Revision 2, did not require that complete, accurate, and up-to-date documentation on the CC HX outlet valves' design be maintained. [H.7] (Section 1R15)

Inspection Report# : 2016003 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : September 05, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017

Calvert Cliffs 1 – Quarterly Plant Inspection Findings

3Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Mitigating Systems

Barrier Integrity

Significance: G Dec 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Inspection of Caulking, Seals, and Expansion Barriers in the Auxiliary Building
Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion XVI, Corrective Action, for Exelon's failure to identify conditions adverse to quality at CCNPP. Specifically, several safety related auxiliary building caulking, seals, expansion joints, and penetration barriers were found by the inspectors or revealed themselves by water intrusion events to be degraded. The inspectors determined that Exelon's failure to identify degradation of several auxiliary building caulking, seals, and expansion joints was a performance deficiency that was reasonably within its ability to foresee and correct and should have been prevented. Exelon's immediate corrective actions included performing operability determinations on degraded barriers, and repair of the degraded barriers. Exelon entered these issues into its corrective action program (CAP) as action request (AR) 02715188, AR 02715199, AR 02716543, AR 02725901, and AR 02564655.

The inspectors reviewed IMC 0612, Appendix B, "Issue Screening," issued on May 6, 2016, and determined the issue is more than minor because it adversely affected the Human Performance attribute, of the Auxiliary Building Area, of the Barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," and found it was sufficiently similar to Example 3.k, in that significant programmatic deficiencies were identified that could have led to worse outcomes. Specifically, several inspection programs designed to identify degraded barriers, caulking, seals, and expansion joints in safety related auxiliary building barriers, had not been performed, or had been performed inadequately. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," issued on October 7, 2016, and IMC 0609, Appendix A, "The Significance

Determination Process for Findings at Power" issued on June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) since, the only safety related degradation represented by the finding is of the radiological barrier function provided for the auxiliary building. The inspectors determined that the cause of the finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon did not complete the baseline inspection required by AMBD-0026 within the 10 years preceding entry of Units 1 and 2 into

their respective periods of extended operation as specified in CNG-CM-6.01. Additionally, inspections conducted under AMBD-0052, and 0-013-49-O-18M were inadequate in that they failed to identify degradation of the barriers as described above. [H.8] (Section 1R15)

Inspection Report# : 2016004 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : November 29, 2017

Page Last Reviewed/Updated Monday, November 06, 2017

Calvert Cliffs 1 – Quarterly Plant Inspection Findings

4Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Mitigating Systems

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : February 01, 2018

Page Last Reviewed/Updated Monday, November 06, 2017