

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:  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 battery 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 margin 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:  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 correctly, and design changes were incorporated into the 125 Vdc system design documents. In response, Constellation entered the issue into the corrective 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 complete, 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:  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 degraded 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 safety 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:  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 transition 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 render 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:  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:  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:  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