Calvert Cliffs 2
2Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Jun 20, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to identify an Inoperable Pressurizer Safety Valve
• Green. A self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified because Constellation did not identify a degraded pressurizer safety valve. Specifically, the team found that Constellation did not recognize that the pressurizer safety valve was set and tested at a temperature outside the Unit 2 acceptable temperature profile band. Additionally, when the temperature profile was changed Constellation failed to identify that the new profile would affect the valve lift setpoint. As a result, the pressurizer safety valve simmered following an automatic trip. Subsequent bench testing of the valve identified that the lift setpoint was too low. Constellation submitted a licensee event report (LER) and entered this issue into the corrective action program for resolution.

The finding was more than minor because it was similar to NRC Inspection Manual Chapter 0612, Appendix E, example 2.a. The finding was associated with the equipment performance attribute of the initiating events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability during power operations. Specifically, opening of the pressurizer safety valve increased the likelihood of a stuck open relief valve event. The finding was evaluated using Phase 1 of Inspection Manual Chapter 0609 Attachment 4, and determined to be of very low safety significance because the deficiency was not associated with increased reactor coolant system leakage and would not have caused other mitigating systems to fail.

Inspection Report# : 2008009 *(pdf)*

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:  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
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 Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inoperable LRNI Channel Due to Incorrect Circuit Card Installation
A Green, self-revealing, NCV of TS 3.3.1, "Reactor Protection System (RPS) Instrumentation," was identified because Constellation entered Modes 1 and 2 without the TS required number of linear range nuclear instrumentation (LRNI) channels operable. On April 2, 2007, while in Mode 1, during a Unit 2 reactor startup, operators noted that Channel C LRNI did not provide indication on the reactor protective system calibration and indication panel. Constellation determined that a technician error led to the incorrect installation of the circuit card that resulted in the inoperable LRNI channel and post-maintenance testing failed to identify the misplaced circuit card prior to the mode of applicability for the affected channel. Upon discovery of the inoperable LRNI channel, Constellation took immediate corrective action to bypass the inoperable channel in accordance with TS 3.3.1.A. and restored the circuit card to the correct location. Constellation entered this issue into the CAP for resolution.

This finding is greater than minor because it affects the configuration control attribute of the Mitigating System cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, proper reactor protection system capability was not maintained as required by TS. The inspectors determined that the finding was 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. This finding has a cross-cutting aspect

in the area of Human Performance because Constellation did not use human error prevention techniques, such as self and peer checking, and proper documentation of activities, which resulted in the incorrect installation of a circuit card (H.4.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)*

Significance: G Dec 28, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Reactor Operation Above Licensed Power Limit
A self-revealing NCV of very low safety significance of License Condition 2.C.(1) to Renewed Facility Operating License DPR-69, occurred when Constellation operated Unit 2 in excess of the licensed power limit of 2700 megawatt thermal (MWTH). On December 8, 2007, during a load change following main turbine control valve testing, operators inadvertently increased the two-minute instantaneous thermal power above the licensed power limit of 2700 MWTH for approximately 15 minutes. Constellation conducted a prompt investigation and determined that operators did not adequately stop the power ascension due to distractions with the withdrawal of control element assemblies (CEAs) to the full out position and the inappropriate use of turbine load (turbine load was already at 100 percent) to maintain cold leg temperature within TS limits. Following the event, Constellation took immediate corrective action to remediate the operators controlling the evolution and entered this issue into their CAP.

The finding is more than minor because it is associated with the human performance attribute of the Barrier Integrity cornerstone and affects the cornerstone objective to provide a reasonable assurance that physical design barriers, such as fuel cladding, protect the public from radionuclide releases caused by accidents or events. Specifically, operation above the licensed limit reduced the 2 percent uncertainty margin assumed in the accident analysis to protect the fuel cladding from damage. The inspectors determined that the finding was of very low safety significance because the reduction of the uncertainty margin assumed in the accident analysis was only associated with the fuel barrier integrity and did not affect the reactor coolant system (RCS) or containment barriers. This finding has a cross-cutting aspect in the area of Human Performance because Constellation did not effectively communicate expectations of procedural compliance in that the operators did not appropriately monitor plant parameters during the power increase (H.4.b per IMC 0305).

Inspection Report# : 2007005 *(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