Calvert Cliffs 2
1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Jun 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures and maintain Configuration Control during Reactor Fill
The inspectors identified a NCV of Technical Specifications (TS) 5.4.1.a, Administrative Controls, because Constellation did not maintain equipment alignment in accordance with site procedures during drain and fill of the reactor coolant system (RCS). Specifically, operations personnel did not verify a reactor level instrument inlet valve shut prior to the vacuum fill of the RCS contrary to Operating Procedure (OP)-7, Shutdown Operations, and Operating Instruction (OI)-1A, Reactor Coolant System and Pump Operation. This allowed air to enter the in-service RCS level instrumentation lines causing a loss of all level indication for a period of approximately five hours while in reduced inventory. Constellation entered this issue into their CAP as IRE-021-661 and IRE-022-119. The immediate corrective actions included restoration of RCS level from a reduced inventory condition and a prompt investigation to determine the cause of the loss of all level indication.

This finding is greater than minor because it is associated with the Initiating Event cornerstone attribute of configuration control and affects the likelihood of a loss of shutdown cooling event. The inspectors evaluated the significance of the finding using IMC 0609, Appendix G, “Shutdown Operations SDP” and Appendix H, “Containment Integrity SDP,” because it represented an actual loss of level indication. Based on the results of the Phase 3 analysis, this finding is determined to have very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance because Constellation did not define and effectively communicate expectations regarding procedural compliance such that personnel follow procedures (H.4.b).
Inspection Report# : 2007003 *(pdf)*

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:  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:  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)*

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 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)*

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