

# Calvert Cliffs 1

## 4Q/2008 Plant Inspection Findings

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### Initiating Events

**Significance:**  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*)

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### Mitigating Systems

**Significance:**  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:**  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:**  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:**  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:**  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:**  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:**  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*)

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## **Barrier Integrity**

**Significance:**  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*)

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## **Emergency Preparedness**

**Significance:**  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*)

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

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