



**UNITED STATES**  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

February 7, 2008

Mr. James A. Spina, Vice President  
Calvert Cliffs Nuclear Power Plant, Inc.  
Constellation Generation Group, LLC  
1650 Calvert Cliffs Parkway  
Lusby, Maryland 20657-4702

**SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 05000317/2007005 AND 05000318/2007005**

Dear Mr. Spina:

On December 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant (CCNPP) Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on January 11, 2008, with Mr. Bauder and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified finding and one self-revealing finding of very low safety significance (Green). Both of the findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program (CAP), the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region 1; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the CCNPP.

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Sincerely,

***/RA/***

Glenn Dentel, Chief  
Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-317, 50-318  
License Nos.: DPR-53, DPR-69

Enclosure: Inspection Report 05000317/2007005 and 05000318/2007005  
w/Attachment: Supplemental Information

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S. Pattison, SLO (2)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-317, 50-318

License Nos.: DPR-53, DPR-69

Report No.: 05000317/2007005 and 05000318/2007005

Licensee: Constellation Generation Group, LLC (Constellation)

Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Location: Lusby, MD

Dates: October 1, 2007 through December 31, 2007

Inspectors: Silas Kennedy, Senior Resident Inspector  
Marlone Davis, Resident Inspector  
Gilbert Johnson, Operations Engineer  
Peter Presby, Operations Engineer  
Ronald Rolph, Health Physicist  
Paul R. Frechette, Physical Security Inspector  
Anthony Dimitriadis, Senior Physical Security Inspector

Approved by: Glenn Dentel, Chief  
Projects Branch 1  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000317/2007-005, 05000318/2007-005; 10/01/2007 - 12/31/2007; Calvert Cliffs Nuclear Power Plant, Units 1 and 2: Post-Maintenance Testing and Event Follow-up.

The report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Two Green findings were identified, both of which were determined to be NCVs. The significance for most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealing Findings

#### **Cornerstone: Mitigating Systems**

- Green. 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). (Section 1R19)

#### **Cornerstone: Barrier Integrity**

- Green. 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). (Section 4OA3)

B. Licensee-Identified Violations

None.

## REPORT DETAILS

Summary of Plant Status

Calvert Cliffs Unit 1 began the inspection period at 100 percent reactor power. On October 2, 2007, operators reduced power to 84 percent to perform waterbox condenser cleaning. Operators returned the Unit to 100 percent power on the same day. On October 20, operators reduced power to less than 10 percent to replace the main generator's stator liquid cooling (SLC) system filters. Operators returned the unit to 100 percent power on October 21, and the Unit remained at 100 percent power the remainder of the inspection period.

Calvert Cliffs Unit 2 began the inspection period at 100 percent reactor power. On December 7, operators reduced power to 84 percent to perform main turbine valve testing. Operators returned the Unit to 100 percent power on December 08. The Unit remained at 100 percent power for the remainder of the inspection period.

**1. REACTOR SAFETY****Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**1R01 Adverse Weather Protection (71111.01 - One Sample)Adverse Weather Seasonal Preparations – Cold Weathera. Inspection Scope

The inspectors performed a review of cold weather preparations before the onset of the cold weather season to evaluate the site's readiness for seasonal susceptibilities. This review included an assessment of Nuclear Operations Program Procedure NO-1-119, "Seasonal Readiness." The inspectors assessed the effectiveness of the site's cold weather readiness program to ensure that the selected systems would remain functional and available for a plant shutdown during cold weather conditions as required by TS. The inspectors also discussed the protective measures applicable to the systems with control room operators, the seasonal readiness coordinator, and the system engineer. Additionally, the inspectors performed partial field walkdowns to evaluate the material condition and functionality of the freeze protection equipment (e.g., heat tracing, instrumentation, and ventilation) associated with the systems. The inspection activity represents the completion of one sample and included a review of the following risk significant systems to evaluate for the site's cold weather readiness:

- 11 refueling water tank; and
- 2A emergency diesel generator (EDG).

b. Findings

No findings of significance were identified.

## 1R04 Equipment Alignment

### .1 Partial Walkdown (71111.04Q – One Sample)

#### a. Inspection Scope

The inspectors verified that selected equipment trains of safety-related and risk significant systems were properly aligned. The inspectors reviewed plant documents to determine the correct system and power alignments, as well as the required positions of critical valves and breakers. The inspectors verified that the Constellation had properly identified and resolved equipment alignment problems that could cause initiating events or potentially affect the availability of associated mitigating systems. The applicable documents used for this inspection are located in the Attachment. The inspectors performed a partial walkdown of the 2A EDG during maintenance on the 2B EDG.

#### b. Findings

No findings of significance were identified.

### .2 Complete Walkdown (71111.04S – Two Samples)

#### a. Inspection Scope

The inspectors performed a complete system walkdown of the systems listed below to identify any discrepancies between the existing equipment lineup and the specified lineup. During the walkdown, system drawings and OIs were used to verify proper equipment alignment and operational status. The inspectors reviewed open maintenance orders (MO) on the system for any deficiencies that could affect the ability of the system to perform its safety function. Inspectors also reviewed unresolved design issues such as temporary modifications, operator workarounds, and items tracked by plant engineering to assess their collective impact on system operation. Additionally, the inspectors reviewed the condition report (CR) database to verify that equipment alignment problems were being identified and appropriately resolved. The inspectors performed a complete walkdown for the following systems:

- Unit 2 component cooling system (CC); and
- Unit 1 SW system.

#### b. Findings

No findings of significance were identified.

## 1R05 Fire Protection (71111.05Q – Seven Samples)

#### a. Inspection Scope

The inspectors conducted a tour of accessible portions of fire areas to assess Constellation's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and related compensatory measures when required. The inspectors assessed the material condition of fire suppression and detection equipment to determine whether any conditions or

deficiencies existed that could impair the availability of the equipment. The applicable documents used for this inspection are located in the Attachment. The inspectors performed a walkdown of the following areas:

- Unit 1 component cooling room, fire area 15, room 228;
- Unit 2 component cooling room, fire area 12, room 201;
- P-13000-1 transformer, fire area - yard;
- P-13000-2 transformer, fire area - yard;
- Unit 2 switchgear room 27 foot elevation, fire area 18, room 311;
- Unit 2 switchgear room 45 foot elevation, fire area 25, room 407; and
- Unit 1 refueling water tank pump room, fire area 44, room 439.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program

.1 Resident Inspector Quarterly Review (71111.11Q - One Sample)

a. Inspection Scope

On November 19, 2007, the inspectors observed a licensed operator requalification exam scenario to assess operator performance and the adequacy of the licensed operator training program. The scenario involved intake challenges followed by a loss of coolant accident (LOCA). The inspectors focused on high-risk operator actions performed during implementation of emergency operating procedures (EOP), entry into abnormal operating procedures, and classification of the events related to intake problems, a large break LOCA and steam leak issues. The inspectors evaluated the clarity and formality of communications, the completion of appropriate actions in response to alarms, the performance of timely control board operations and manipulations, and the oversight and direction provided by the shift manager. The Attachment lists the documents reviewed for this section.

b. Findings

No findings of significance were identified.

.2 Biennial Review (71111.11B - One Sample)

a. Inspection Scope

The following inspection activities were performed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," IP 71111.11, "Licensed Operator Regualification Program," and NRC IMC 0609, Appendix I, "Operator Regualification Human Performance SDP," and 10 CFR 55.46, "Simulator Rule" as acceptance criteria.

The inspectors reviewed documentation of operating history since the last requalification program inspection. The inspectors discussed station operating events with the resident staff. Documents reviewed included NRC inspection reports, CRs, and assignment

requests (ARs) that involved human performance issues of licensed operators to ensure that operational events were not indicative of possible training deficiencies.

The inspectors reviewed twelve simulator scenarios and ten job performance measures (JPMs) administered during this current exam cycle to ensure the quality of these exams met or exceeded the criteria established in the Examination Standards and 10 CFR 55.59. In addition, the inspectors did a detailed review of three of the five comprehensive written exams administered.

During the on-site inspection, the inspectors observed the administration of operating examinations to two operating crews and one staff crew. The operating examinations for each crew consisted of two crew simulator scenarios and five JPMs. The examiners observed seven training personnel administering the various components of the exam.

#### Conformance with Simulator Requirements Specified in 10 CFR 55.46

For the site-specific simulator, the inspectors observed simulator performance during the conduct of the examinations, and reviewed discrepancy reports to verify compliance with the requirements of 10 CFR 55.46.

The inspectors reviewed a sample of simulator tests including malfunction, transient, normal, and steady state tests. The inspectors also reviewed a sample of completed simulator deficiency reports (DRs) from the past two-year period to determine whether the described issues were effectively addressed.

Conformance with operator license conditions was verified by reviewing the following records:

- Nine medical records were reviewed to determine whether the records were complete, that restrictions noted by the doctor were reflected on the individual's license and that the exams were given within 24 months. License restrictions were compared to NRC records.
- A sample of five licensed operator reactivation records were reviewed as well as one full shift of licensed personnel watch-standing documentation for time on shift to verify currency and conformance with the requirements of 10 CFR 55.
- All remediation training records from the past two-year training cycle were reviewed. These records were associated with operators who failed cycle written exams.

#### Licensee's Feedback System.

The inspectors interviewed instructors, training/operations management personnel, and licensed operators for feedback regarding the implementation of the licensed operator requalification program to ensure the requalification program was meeting their needs and was responsive to their noted deficiencies/recommended changes. In addition, the inspectors reviewed feedback summaries submitted by the operators.

On December 20, 2007, the inspectors conducted an in-office review of operator requalification exam results. The inspection assessed whether pass rates were

consistent with the guidance of NRC IMC 0609 SDP, Appendix I. The inspectors reviewed the exam results to determine whether:

- Crew failure rate on the dynamic simulator was greater than 20%. (Failure rate was 0.0%)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Failure rate was 1.0%)
- Individual failure rate on the walkthrough test (JPMs) was less than or equal to 20%. (Failure rate was 4.5%)
- More than 75% of the individuals passed all portions of the exam (94% of the individuals passed all portions of the exam).

b. Findings

The inspectors' review of a licensed SRO's medical records revealed that an ongoing condition necessitated a medication that would require a "no solo" license restriction. The SRO did not report his medical condition change in May 2003 to Constellation or the NRC. The Constellation physician assistant discovered the new medication prescribed to the SRO during a routine physical in January 2005, and determined that it was for a medical condition that required a "no solo" license restriction. Constellation reported the issue to the NRC and processed the required documentation to have the SRO's license amended to include the "no solo" condition.

An Unresolved Item (URI) will track NRC evaluation of this issue until additional NRC review determines whether Constellation personnel failed to timely notify the NRC of a medical condition that resulted in an SRO license restriction and, therefore, was in violation of 10 CFR 50.74. **(URI 05000317 & 05000318/2007005-01, Timely NRC notification of SRO license restriction)**

1R12 Maintenance Effectiveness (71111.12Q - One Sample)

a. Inspection Scope

The inspectors reviewed the No. 11 and No. 22 containment air coolers (CACs) for the following: 1) appropriate work practices; 2) identifying and addressing common cause failures; 3) scoping in accordance with 10 CFR 50.65(b) of the maintenance rule; 4) characterizing reliability issues for performance; 5) trending key parameters for condition monitoring; 6) charging unavailability for performance; 7) classification in accordance with 10 CFR 50.65(a)(2); and 8) appropriateness of the performance criteria for the CACs classified as (a)(2). Documents reviewed are listed in the Attachment.

b. Findings

No findings of significances were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Five Samples)a. Inspection Scope

The inspectors reviewed the following activities to verify that station personnel performed the appropriate risk assessments prior to removing equipment for work. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors compared the risk assessments and risk management actions performed by station procedure NO-1-117, "Integrated Risk Management," to the requirements of 10 CFR 50.65(a)(4), the recommendations of the Nuclear Management and Resources Council 93-01, Revision 2, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and approved station procedures. In addition, the inspectors assessed the adequacy of Constellation's identification and resolution of problems associated with maintenance risk assessments and emergent work activities. Documents reviewed are listed in the Attachment.

- Planned maintenance to transfer all electrical buses to P-13000-2 and de-energize P-13000-1 due to the 500 kV black bus outage (October 2, 2007).
- Planned maintenance to align the alternate 13kV transformer to the 11 service bus after relay calibrations and to support revenue metering testing (October 10, 2007).
- Emergent work on the No. 21 condensate pump breaker malfunction (October 18, 2007).
- Planned down power of Unit 1 due to SLC maintenance on the main rectifier filters (October 20, 2007).
- Planned maintenance on the 23 auxiliary feedwater (AFW) pump and the 2B EDG (December 5, 2007).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - Two Samples)a. Inspection Scope

The inspectors reviewed operability evaluations and/or CRs to verify that the identified conditions did not adversely affect safety system operability or plant safety. The evaluations were reviewed using criteria specified in NRC Regulatory Issue Summary 2005-20, "Revision to Guidance formerly contained in NRC Generic Letter 91-18, Information to Licensees Regarding two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability" and Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety." In addition, where a component was inoperable, the inspectors verified the TS limiting condition for operation implications were properly addressed. Documents reviewed are listed in the Attachment.

The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- No. 21 shutdown cooling (SDC) HX CC outlet control valve 2-CV-3828 failure (IRE-025-472/OD-07-012); and
- No. 22 AFW pump steam admission valve stroke time test failure (IRE-027-435).

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A – Two Samples)

a. Inspection Scope

The inspectors reviewed two risk-significant permanent plant modification packages. The inspectors verified that: 1) the design bases, licensing bases, and performance capability of risk-significant structures, systems, and components (SSCs) were not adversely affected or degraded through the modifications; and 2) the modifications performed during increased risk configurations did not place the plant in an unsafe condition. The inspectors also reviewed field change notices that were issued during the installation to confirm that the problems associated with the installation were adequately resolved. Additionally, the inspectors reviewed the affected procedures, drawings, design basis documents, and Updated Final Safety Analysis Report (UFSAR) sections to verify that the affected documents were appropriately updated. The risk-significant permanent plant modification are as follows:

- Implementation of the RCS vacuum fill modification; and
- SW flow instrumentation relocation modification.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – Five Samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data, to verify that the test results adequately demonstrated restoration of the affected safety functions. Documents reviewed are listed in the Attachment.

- No. 11B SRWHX basket strainer differential pressure indicator cleaning of the 11B SRWHX plenum (MO #1200503094).

- No. 12 low pressure safety injection pump motor inspections and relay testing (MO #1200700537 and MO #1200700538).
- No. 14 CAC SRW outlet control valve (1-CV-1594) air leak at the diaphragm (MO #1200703914).
- 2A EDG two-year overhaul inspections (MO #220700773).
- 2B EDG speed control issues during slow speed start for monthly surveillance testing (MO #2200705551).

b. Findings

Introduction: An NRC-identified finding of very low safety significance (Green) associated with an NCV of TS 5.4.1.a, Procedures, for Units 1 and 2 was identified because Constellation did not establish and maintain an adequate procedure to vent and flush the SW strainer pressure transmitters and flow controllers.

Description: On July 23, 2007, IM technicians performed a vent and flush of the SW instrumentation transmitters twice before returning the 11B SRWHX back to service following maintenance activities. Approximately ten hours later, operators declared the 11B SRWHX inoperable when the SW strainer pressure transmitter (1-PDIS-5210A) prevented the automatic flush of the 11B SW strainer. The malfunction of the pressure transmitter affected the flushing valve in that debris accumulated in the strainer and caused a reduction in saltwater flow to the SRWHX. Constellation initiated a CR (IRE-024-194) and concluded that this was most likely due to air intrusion in the sensing line of the transmitter following cleaning of the 11B SRWHX. Following a review of the corrective actions and the event, the inspectors identified that the procedure used to perform the evolution did not provide operators and technicians with adequate procedural guidance on venting and flushing the SW instrumentation. The inspectors observed the technicians perform this evolution as a “skill of craft” or trained proficiency with a one-page line-up to open and shut valves with no time duration for the vent and flush of the instrumentation.

The inspectors also identified that numerous air intrusion problems occurred in the past where SW instrumentation transmitters read lower than expected following maintenance that included subsequent venting activities. However, the corrective actions associated with these issues focused on performing additional venting and flushing and did not evaluate whether the initial vent or flush provided an adequate duration of time such that it could remove the air from the instrument lines.

Constellation entered this issue into their CAP for resolution as IRE-024-194 and IRE-027-939. Immediate corrective actions following the July 23, 2007, event included instructions to extend the time that technicians vent and flush the SW strainer instrumentation. The planned corrective action going forward is to review and revise procedure OI-29, as necessary, to incorporate extended venting and flushing guidance.

The performance deficiency is that Constellation did not establish and maintain an adequate procedure to vent and flush the SW strainer pressure transmitters. This resulted in an inoperable train of SRW subsystem following maintenance on the 11B SRWHX. This issue was considered an NRC-identified finding because Constellation was not previously aware that OI-29 was inadequate.

Analysis: 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. Specifically, the inadequate vent and flush of the SW strainer instrumentation rendered one-train of SRW unavailable. The inspectors evaluated the significance of this finding using Phase 1 of the IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." 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 AOT, 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 of IMC 0305).

Enforcement: TS 5.4.1.a, "Procedures," requires that written procedures shall be established, implemented, and maintained for activities specified in Regulatory Guide 1.33, Appendix A, Revision 2. Regulatory Guide 1.33, Appendix A, item 3, states, in part, that instructions for filling and venting should be prepared, as appropriate for the service water system. Contrary to these requirements, prior to July 23, 2007, Constellation did not establish and maintain an adequate procedure to vent and flush the SW strainer pressure transmitters. Specifically, OI-29, SW System, did not provide operations and 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 SRWHXs. Because this issue is of very low safety significance (Green) and Constellation entered this issue into their CAP as IRE-024-194 and IRE-027-939, this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000317 and 05000318/2007005-02: Inadequate vent procedure for the SW strainer pressure transmitters)**

1R22 Surveillance Testing (71111.22 – Four Samples)

a. Inspection Scope

The inspectors observed and/or reviewed the surveillance tests listed below associated with selected risk-significant SSCs to determine whether the testing adequately demonstrated the ability to perform its intended safety function. The inspectors also verified that proper test conditions were established as specified in the procedures, no equipment preconditioning activities occurred, and that acceptance criteria had been satisfied. The documents reviewed during this inspection are listed in the Attachment.

- STP-O-65G-2, component cooling valve quarterly test
- STP-O-73C-2, component cooling pump quarterly test
- STP-O-73A-2, SW pump and valve operability in-service test
- STP-O-8A-1, test of 1A diesel generator and 11 4kV bus loss of coolant incident sequencer.

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**

1EP6 Drill Evaluation (71114.06 – One Sample)a. Inspection Scope

The inspectors observed portions of a site emergency response drill exercise conducted on December 18, 2007, to assess licensed operators' and site emergency response in the area of emergency preparedness. This training exercise focused on equipment failures and operator challenges that would typically exist during a significant event that resulted in emergency classification being reported to state and local officials. The inspectors also observed and evaluated the required procedural transitions and associated event classifications.

b. Findings

No findings of significance were identified.

1EP7 Force-On-Force Exercise Evaluation (71114.07 – One Sample)a. Inspection Scope

On November 7, 2007, the inspectors observed drill players in response to a site emergency preparedness drill conducted in conjunction with a Force-on-Force exercise, documented in inspection report 05000317/318-2007201. The inspectors observed utilization of the security related procedures including classification of the scenario within time requirements. The inspectors also observed portions of the post drill critique to determine whether the evaluators identified observed deficiencies.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Public Radiation Safety**

2PS2 Radioactive Materials Processing and Shipping (71122.02 – Six Samples)a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the UFSAR and the recent radiological effluent release reports for information on the types and amounts of radioactive waste disposed, and reviewed the scope of Constellation's audit program to verify that it meets the requirements of 10 CFR 20.1101C.

The inspectors walked down the liquid and solid radioactive waste processing systems to verify and assess that the current system configuration and operation agree with the descriptions contained in the UFSAR and in the Process Control Program. The inspectors reviewed the status of any radioactive waste process equipment that is not operational and/or is abandoned in place and verified that the changes were reviewed and documented in accordance with 10 CFR 50.59, as appropriate. The inspectors reviewed current processes for transferring radioactive waste resin and sludge discharges into shipping/disposal containers to determine if appropriate waste stream mixing and/or sampling procedures, and methodology for waste concentration averaging provide representative samples of the waste product for the purposes of waste classification as specified in 10 CFR 61.55 for waste disposal.

#### Waste Characterization & Classification

The inspectors reviewed the radiochemical sample analysis results for Constellation's radioactive waste streams; reviewed Constellation's use of scaling factors and calculations used to account for difficult-to-measure radionuclides; and verified that Constellation's program assures compliance with 10 CFR 61.55 and 10 CFR 61.56 as required by Appendix G of 10 CFR Part 20. The inspectors reviewed Constellation's program to ensure that the waste stream composition data accounts for changing operational parameters and thus remains valid between the annual or biennial sample analysis updates.

#### Shipment Preparations

The inspectors observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver. The inspectors verified that the requirements of any applicable transport cask Certificate of Compliance have been met. The inspectors verified that Constellation was authorized to receive the shipment packages; and, observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation activities. The inspectors assessed whether shippers were knowledgeable of the shipping regulations and of sufficient skill to accomplish the package preparation requirements for public transport with respect to NRC Bulletin 79-19 and 49 CFR Part 172 Subpart H, and verified that Constellation's training program provides training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

#### Shipping Records

The inspectors sampled non-excepted package shipment records and reviewed these records for compliance with NRC and Department of Transportation requirements.

#### Problem Identification and Resolution

The inspectors reviewed licensee event reports, special reports, audits, State agency reports, and self-assessments related to the radioactive material and transportation programs performed since the last inspection to determine that identified problems were entered into the CAP for resolution. The inspectors also reviewed corrective action reports written against the radioactive material and shipping programs since the previous inspection.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator (PI) Verification (71151 – Ten Samples)

.1 Mitigating System

a. Inspection Scope

The inspectors reviewed Constellation's PI program to evaluate, collect and report information on Mitigating Systems Performance Index (MSPI). The MSPI systems were reviewed for the period of January 1, 2007, through December 31, 2007. The inspectors used the guidance provided in Nuclear Energy Institute (NEI) 99-02, Revision 5, "Regulatory Assessment PI Guideline" to assess the accuracy of Constellation's collection and reporting of PI data. The inspectors reviewed system unavailability data, monitored component demands, demand failure data, and the consolidated data entry MSPI derivation reports for both unavailability index and unreliability index. Additionally, the inspectors reviewed out-of-service logs, operating logs, and the maintenance rule database to determine the accuracy and completeness of the reported unavailability data. This inspection activity represents the completion of ten samples for Unit 1 and Unit 2.

b. Findings

No findings of significance were identified.

.2 Physical Protection

a. Inspection Scope

The inspectors reviewed Constellation's PI data for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment PIs for the period May 2006 through April 2007. The inspectors verified that the PIs had been properly reported as specified in NEI 99-02. The review included Constellation's tracking and trending reports, personnel interviews, and security event reports for the PI data collected since the last security baseline inspection. The inspectors noted from Constellation's submittal that there were no reported failures to properly implement the requirements of 10 CFR 73 and 10 CFR 26 during the reporting period.

The security PIs were inspected during the annual security baseline inspection and the documentation was inadvertently omitted from the security baseline inspection report issued previously in 2007.

b. Findings

No findings of significance were identified.

#### 4OA2 Identification and Resolution of Problems (71152 – Two Samples)

##### .1 Reviews of Items Entered Into the CAP

###### a. Inspection Scope

The inspectors performed a daily screening of items entered into Constellation's CAP as required by IP 71152, "Identification and Resolution of Problems." The review facilitated the identification of potentially repetitive equipment failures or specific human performance issues for follow-up inspection. This was accomplished by reviewing the description of each new CR and attending screening meetings.

###### b. Findings

No findings of significance were identified.

##### .2 Annual Sample: Unit 1 No. 11 CAC Motor Failure

###### a. Inspection Scope

The inspectors completed an in-depth review of Constellation's evaluation and corrective actions associated with a December 16, 2006 failure of the Unit 1 No. 11 CAC motor. The inspectors verified that Constellation adequately addressed and fully understood the issue. The corrective actions were reviewed to ensure that the full extent of the issue was identified, an appropriate evaluation was performed and appropriate corrective actions were specified, prioritized and implemented. The inspectors evaluated these actions against the requirements of Constellation's CAP and 10 CFR Part 50, Appendix B. Additionally, Constellation's personnel were interviewed with respect to the effectiveness of the implementation of these corrective measures.

###### b. Assessment and Findings

No findings of significance were identified.

The inspectors determined that the corrective actions associated with the failure of the Unit 1 No. 11 CAC motor complied with Constellation's procedures. The inspectors concluded that the apparent cause addressed the failure mechanism and considered the extent of condition of the remaining seven CACs.

##### .3 Semi-Annual Review

###### a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. The inspectors reviewed CCNPP Units 1 and 2 PI monthly reports, CRs, system health reports, quality assurance audits, self-assessment reports, maintenance reports, and NRC inspection reports and interviewed key personnel to evaluate if any adverse trends existed.

###### b. Assessment and Observations

No findings of significance were identified.

The inspectors noted an adverse trend related to an increase in the number of performance issues related to inadequate procedures. This trend included both NRC and Constellation identified issues within the last four quarters of which three concerned the lack of appropriate acceptance criteria in surveillance procedures. This adverse trend of inadequate procedures was not previously identified by Constellation. Constellation entered this issue into their CAP as IRE-028-619.

#### 4OA3 Event Followup (71153 - Two Samples)

##### .1 Operating Above the Licensed Power Limit

###### a. Inspection Scope

On December 8, 2007, during a load change to return Unit 2 from 84 percent reactor power to 100 percent reactor power following main turbine control valve testing, operators inadvertently increased the two-minute instantaneous thermal power above the licensed power limit of 2700 MWTH. The maximum power level attained was 2741 MWTH. The total time above the licensed limit was approximately 15 minutes. The inspectors conducted a follow-up inspection to gain an understanding of the event and to assess the appropriateness of operator actions. The inspectors interviewed the shift manager and reviewed Constellation procedures, the prompt investigation, the control room logs, and related supporting documentation.

###### b. Findings

Introduction: A self-revealing NCV of very low safety significance (Green) 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 MWTH.

Description: On December 8, 2007, during a load change to return Unit 2 from 84 percent reactor power to 100 percent reactor power following main turbine control valve testing, operators inadvertently increased the two-minute instantaneous thermal power above the licensed power limit of 2700 MWTH. The maximum power level attained was 2741 MWTH. The total time above the licensed limit was 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 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 licensed operators controlling the evolution and entered this issue into their CAP (IRE-027-571).

The inspectors determined that operation in excess of 2700 MWTH for approximately 15 minutes was a violation of Constellation's license condition. Based on the cause of the event (human error) and the duration of the transient, the inspectors concluded that the power excursion above 2700 MWTH was not due to normal fluctuations of plant parameters while operating at or near the licensed power limit. The inspectors determined that operators did not adequately monitor plant parameters as required by

OI-2B, "CVCS Boration, Dilution and Makeup Operations," and take appropriate action to stop the power increase which resulted in exceeding the licensed thermal power limit.

The performance deficiency is that Constellation operated Unit 2 in excess of its licensed power limit of 2700 MWTH.

Analysis: 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. In accordance with NRC IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 SDP screening. The inspectors determined that the finding was of very low safety significance (Green) 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 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).

Enforcement: License Condition 2.C.(1) to Renewed Facility Operating License DPR-69, specifies that the Constellation is authorized to operate the facility at reactor steady-state core power levels not in excess of 2700 megawatts thermal. Contrary to this requirement, on December 8, 2007, while returning to 100 percent power following main turbine valve testing, Constellation operated in excess of the licensed limit for approximately 15 minutes. Because this violation is of very low safety significance (Green) and Constellation entered the issue into their CAP (IRE-027-571), this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000318/2007005-03: Reactor Operation Above Licensed Power Limit)**

.2 Down Power of Unit 1 Due to SLC Filter Replacement

a. Inspection Scope

On October 20, 2007, operators reduced power to less than 10 percent to replace the Unit 1 SLC system filters. The filter replacement was due to the rectifier and main filter differential pressure trends. Following the replacement of the filters, operators restored the unit to 100 percent power on October 21, 2007. The inspectors observed and assessed the planned down-power, and evaluated the performance of the licensed operators. The inspectors also reviewed control room procedures and operator logs to determine if operators performed appropriate actions in accordance with their training and established station procedures. The Attachment lists the documents reviewed for this event.

b. Findings

No findings of significance were identified.

#### 4OA5 Other Activities

##### .1 (Closed) URI 05000318/2007004-04, Unit 2 Pressurizer Safety Valve Low Lift Setting

An unresolved item (URI) was opened in NRC Inspection Report 05000318/2007004 for a potential performance deficiency associated with the setting of the pressurizer safety valves (PSVs). Constellation's apparent cause evaluation completed in March 2007 determined that the PSV low set point was due to degraded threads on the bonnet and compression screw. The as-found condition of the compression screw failed a "go/no go" gauge test of the threads. The apparent cause concluded that this condition was not detected because the PSV was refurbished and tested in 2003 prior to incorporating the gauge test into the vendor repair procedure. However, when questioned by the inspectors, Constellation determined that the gauge test was actually incorporated in the vendor maintenance procedure in 2001. Constellation wrote condition report IRE-025-193 to investigate this discrepancy.

The inspectors conducted a follow-up inspection to assess Constellation's resolution of this issue. Upon further review and discussions with the vendor, Constellation determined that the degraded threads on the bonnet and compression screw did not cause the low lift setting. As a result, the inspectors determined that the gauge test most likely would not have identified the degraded conditions that led to the low lift setting of the PSV. Therefore, the inspectors concluded that there was no performance deficiency associated with the use of the gauge test and the subsequent setting of the PSVs. This URI is closed.

##### .2 (Closed) URI 05000318/2006005-05, EOP-0 Issues Identified Following November 16, 2006 Trip

An URI was opened in NRC Inspection Report 05000318/2006005 for a potential performance deficiency associated with the adequacy of steps in EOP-0, "Post-Trip Immediate Actions." During the November 16, 2006, reactor trip event, one pressurizer power operated relief valve (PORV), which opened to control RCS pressure, remained opened for longer than expected (about 90 seconds) due to a mechanical stem problem. The inspectors noted that the PORV had closed prior to the operators having an opportunity to consider closing the PORV block valve to terminate the unwanted pressure reduction. The inspectors reviewed whether EOP-0 provided adequate steps for operator to take action for a stuck open PORV.

The inspectors conducted a follow-up inspection to resolve concerns with this issue. Constellation completed an assessment of this issue and determined that EOP-0 should be clarified concerning what conditions constitute an open or closed PORV such that appropriate operator actions can be taken. In addition, Constellation determined that the EOP-0, Section H, "Perform Diagnostic Actions," was adequate based on the diagnostic table used to aid the operators in determining the recommended course of action along with other available information. The inspectors reviewed Constellation's assessment and corrective actions associated with this issue and determined that there was no performance deficiency. This URI is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 11, 2008, the resident inspectors presented the inspection results to Mr. Bauder and other members of your staff who acknowledged the findings. The inspectors asked Constellation whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT****Constellation Personnel**

J. Spina, Site Vice President  
 D. Bauder, Plant General Manager  
 P. Beavers, Engineering Supervisor  
 K. Burroughs, Chemistry Supervisor  
 J. Branyan, Surveillance Test Coordinator  
 S. Dean, Operations Manager  
 M. Flaherty, Engineering Manager  
 P. Furio, Licensing Supervisor  
 J. Gaines, Licensing Director  
 J. Gines, Principal Consultant  
 K. Gould, Radiation Protection Manager  
 G. Gwiazdowski, Director, Nuclear Security  
 S. Henry, Engineering Supervisor  
 W. Holston, Training Manager  
 J. Lenhart, Radiation Protection Supervisor  
 R. Pace, General Supervisor Operations Training  
 B. Pomphrey, Assistant General Supervisor  
 T. Riti, General Supervisor Operations  
 A. Simpson, Senior Licensing Engineer  
 C. Walker, Simulator Tester  
 J. York, Supervisor Radiation Protection

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED****Open**

05000317&318/2007005-01 URI Timely NRC notification of SRO license restriction  
(Section 1R11)

**Opened and Closed**

05000317&318/2007005-02 NCV Inadequate Vent Procedure for the SW Strainer  
Pressure Transmitters (Section 1R19)

05000318/2007005-03 NCV Reactor Operation Above Licensed Power Limit  
(Section 4OA3)

**Closed**

05000318/2007004-03 URI Unit 2 Pressurizer Safety Valve Low Lift Setting  
(Section 4OA5)

05000318/2006005-04 URI EOP-0 Issues Identified Following the November

16, 2006 Trip (Section 4OA5)

Discussed

None

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### Procedures

NO-1-119, Seasonal Readiness, Revision 0  
OI-3A-1, Safety Injection and Containment Spray, Revision 20  
OI-21B-2, 2B Diesel Generator, Revision 18

#### Other

0-102-04-0-M, Freeze Protected Equipment, Revision 8  
Pre-Winter Assessment of Seasonal Readiness dated 10/01/2007

### **Section 1R04: Equipment Alignment**

#### Procedures

OI-16-2, Component Cooling, Revision 28  
OI-29-2, Saltwater System, Revision 53  
OI-21A-2, 2A Diesel Generator, Revision 18

#### Drawings

62710SH001, Component Cooling System, Revision 38  
62710SH002, Component Cooling System, Revision 24  
62710SH003, Component Cooling System, Revision 39  
60708SH001, Circulating Saltwater Cooling System, Revision 42  
60708SH002, Circulating Saltwater Cooling System, Revision 104  
60708SH003, Circulating Saltwater Cooling System, Revision 17  
60706SH002, Service Water Cooling System, Revision 74

#### Condition Reports

IRE-025-472  
IRE-025-517  
IRE-014-558  
IRE-024-996  
IRE-024-980

#### Other

SD-015, Component Cooling System, Revision 4  
Saltwater System Health Report

### **Section 1R05: Fire Protection**

SA-1, Fire Protection Program, Revision 6  
FP-0002, Fire Hazards Analysis Summary Document, Revision 0

Fire Fighting Strategies Manual, Revision 0  
Calculation CA02243, Combustion Loading Analysis Report, Revision 1  
UFSAR Section 9.9, Calvert Cliffs Power Plant Fire Protection Program, Revision 38

**Section 1R11: Licensed Operator Requalification Program**

Procedures

NO-1-200, Control of Shift Activities, Revision 32  
OP-23, Evaluated Scenario, Revision 5  
EOP-1-1, Reactor Trip, Revision 13

**Section 1R12: Maintenance Effectiveness**

Procedures

ER-1-103, Maintenance Rule Program Implementation, Revision 1

Condition Reports

IRE-019-020

Work Orders

MO#1200303577  
Reptask#10602031

Other

Maintenance Rule Scoping Document, Revision 26  
(a)(3) Periodic Assessment of Maintenance Rule Program, dated October 2004 through  
September 2006

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

NO-1-117, Integrated Risk Management, Attachment 9, High Risk Activity Plan, Revision 19

Condition Reports

IRE-024-931

Other

Breaker 41 Replacement Operations Script

**Section 1R15: Operability Evaluations**

Procedures

CNG-OP-1-01-1002, Conduct of Operability Determinations/Functionality Assessments,  
Revision 0

Condition Reports

IRE-025-472

Other

OD-07-012, 21 SDCHX Component Cooling Outlet Control Valve, Revision 0

**Section 1R17: Permanent Plant Modifications**

Procedures

EN-1-100, Engineering Services Process Overview, Revision 19  
EN-1-102, 10 CFR 50.59/10 CFR 72.48 Reviews, Revision 11

Drawings

60729SH0002, Reactor Coolant System, Revision 8  
62729SH0003, Reactor Coolant Vacuum Refill Boundaries, Revision 0

Condition Reports

IRE-025-472

Other

ES200400040, Implementation of the RCS Vacuum Fill, Supplement 0, Revision 1  
ES200000971, Relocate Saltwater System Flow Instrumentation from North Wall to New Instrument Rack, Supplement 1, Revision 0  
CCNPP UFSAR, Section 7.5.9.4, Reduced Reactor Coolant System Inventory and Mid-loop  
CCNPP UFSAR, Section 9.5.2.3, Saltwater System, Revision 38

**Section 1R19: Post-Maintenance Testing**

Procedures

MN-1-101, Control of Maintenance Activities, Revision, 33  
NO-1-208, Nuclear Operations (NO) Post Maintenance Testing, Revision, 12  
OI-29-1, Saltwater System, Revision 60

Drawings

60708SH0003, Circulating Salt Water Cooling System, Revision 17

Condition Reports

IRE-023-591  
IRE-024-194  
IRE-027-939  
IR4-033-808  
IR4-035-955

Work Orders

MO #1200503094  
MO #1200700537  
MO #1200700538  
MO#1200703914  
MO #2200700773  
MO #2200705551  
MO#1200703016

Other

CCNPP UFSAR, Section 9.5.2.3, Saltwater System, Revision 38  
CCNPP UFSAR, Table 9-17A, Single Failure Analysis, Revision 38  
1-012-06-O-W, Saltwater System Flow Verification, Revision 6

**Section 1R22: Surveillance Testing**

Procedures

STP-O-65G-2, Component Cooling Valve Quarterly Test, Revision 8  
STP-O-73C-2, Component Cooling Pump Quarterly Test, Revision 10  
STP-O-8A-1, Test of 1A DG and 11 4kV Bus LOCI Sequencer, Revision 26  
STP-O-73A-2, Saltwater Pump and Check Valve Quarterly Operability Test, Revision 14

**Section 1EP6: Drill Evaluation**

Procedures

ERPIP 3.0, Immediate Actions, Attachment 1, Emergency Action Level Criteria, Revision 39

Other

Calvert Cliffs Emergency Response Drill Scenario SP-5  
Emergency Action Level Technical Basis Document, Revision 10

**Section 1EP7: Drill Evaluation**

Procedures

ERPIP 3.0, Immediate Actions, Attachment 1, Emergency Action Level Criteria, Revision 39

Other

NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, dated July 18, 2005  
NRC Regulatory Issue Summary 2004-15, Emergency Preparedness Issues: Post-9/1, Supplement 1, dated May 25, 2006

**Section 2PS2: Radioactive Materials Processing and Shipping**

Procedures

CP-617, Shipment of Radioactive Material General Requirements, Revision 0  
CP-618, Packaging for Shipment or Transportation of Radioactive Materials, Revision 1  
CP-619, Radioactive Material Quantification, Identification and Waste Characterization, Revision 0  
CP-622, Shipment of Radioactive Material (Type A or Type B), Revision 0  
CH-1-110, Process Control Program, Revision 0

Condition Reports

IRE-017-836	IRE-022-156	IRE-024-219
IRE-025-356	IRE-025-624	IRE-025-773
IRE-025-953		

Observation Report

OB-2007-05361

Self Assessments

SA200700006; 2006-049

Audits

RPP-06-01-C; RPP-07-01-C

Shipment Records

06-002	06-054	06-109
06-135	07-016	07-038
07-068	07-0833	

**Section 4OA1: Performance Indicator Verification**

CCNPP MSPI Basis Document, Revision 0

**Section 4OA2: Identification and Resolution of Problems**

Procedures

CNG-CA-1.01-100, Apparent Cause Evaluation, Revision 1  
QL-2-100, Corrective Action Program, Revision 20

Drawings

61403SH0122M, Containment Coolers System Flow Sheet, Revision 4  
64303, Unit 1 Service Water Simplified System Drawing, Revision 10

Condition Reports

IRE-019-020  
IRE-019-148  
IRE-019-149  
IRE-019-150  
IRE-019-300

Work Orders

MO#1200606376

**Section 4OA3: Event Followup**

Procedures

CNG-OP-1.01-2001, Communications and Briefings, Revision 0  
1C02-ALM, Unit 1 Turbine Control and Generator Auxiliary Alarm Manual, Revision 40

Drawings

60582, Stator Winding Cooling Water System, Revision 22

Condition Reports

IRE-023-811  
IRE-026-663  
IRE-026-678

Work Orders

MO#1200605076  
MO#1200604303  
MO#1200702949

Other

ODM-07-03, Unit 1 Stator Liquid Cooling, Revision 0

**Section 40A5: Other Activities**Procedures

OP-3, Normal Power Operation, Revision 44

OI-2B, CVCS Boration, Dilution and Makeup Operations, Revision 32

CNG-OP-3.01-1000, Reactivity Management, Revision 0

Condition Reports

IRE-027-571

Other

Prompt Investigation associated with IRE-027-571

**LIST OF ACRONYMS**

ADAMS	Agency-Wide Documents Access and Management System
AFW	Auxiliary Feedwater
AOT	Allowed Outage Time
CAC	Containment Air Coolers
CAP	Corrective Action Program
CC	Component Cooling System
CCNPP	Calvert Cliffs Nuclear Power Plant
CEA	Control Element Assembly
CFR	Code of Federal Regulation
CR	Condition Report
CVCS	Chemical and Volume Control System
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedures
HX	Heat Exchanger
IM	Instrument Maintenance
IMC	Inspection Manual Chapter
LOCA	Loss-of-Coolant Accident
MO	Maintenance Order
MSPI	Mitigating System Performance Indicator
MWTH	Megawatt Thermal
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OI	Operating Instructions
PARS	Publicly Available Records
PI	Performance Indicator
PORV	Power Operated Relief Valve
PSV	Pressurizer Safety Valve
RCS	Reactor Coolant System
SDC	Shutdown Cooling
SDP	Significance Determination Process
SLC	Stator Liquid Cooling
SRW	Service Water
SRWHX	Service Water Heat Exchanger

SSC	Structures, Systems, and Components
SW	Saltwater
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item