



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

December 29, 2009

James A. Spina, Vice President
Calvert Cliffs Nuclear Power Plant
Constellation Energy Nuclear Group, LLC
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT - NRC PROBLEM
IDENTIFICATION AND RESOLUTION INSPECTION REPORT
05000317/2009007 AND 05000318/2009007

Dear Mr. Spina:

On November 20, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant (CCNPP) Units 1 and 2. The enclosed report documents the inspection results, which were discussed on November 20, 2009, with you and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems and compliance with the Commission's rules and regulations and conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

The inspectors concluded that Constellation was generally effective in identifying, evaluating, and resolving problems. Constellation personnel identified problems and entered them into the corrective action program at a low threshold. Constellation prioritized and evaluated issues commensurate with their safety significance and corrective actions were generally implemented in a timely manner.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. The finding was associated with inadequate corrective action implementation and involved a violation of NRC requirements. The NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violation and because it was entered into your corrective action program. 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 I, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Calvert Cliffs. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at CCNPP. The information you provide will be considered in accordance with Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program."

J. Spina

2

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Raymond J. Powell, Chief
Technical Support & Assessment Branch
Division of Reactor Projects

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

Enclosure: Inspection Report 05000317/2009007 and 05000318/2009007
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Raymond J. Powell, Chief
Technical Support & Assessment Branch
Division of Reactor Projects

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

Enclosure: Inspection Report 05000317/2009007 and 05000318/2009007
w/Attachment: Supplemental Information

Distribution w/encl: (via E-mail) -

- S. Collins, RA (R1ORAMAIL RESOURCE)
- M. Dapas, DRA (R1ORAMAIL RESOURCE)
- D. Lew, DRP (R1DRPMAIL RESOURCE)
- J. Clifford, DRP (R1DRPMAIL RESOURCE)
- L. Trocine, RI OEDO
- G. Dentel, DRP
- N. Perry, DRP
- J. Hawkins, DRP
- S. Sloan, DRP
- S. Kennedy, DRP, SRI
- M. Davis, DRP, RI
- C. Newgent, DRP, Resident OA
- RidsNrrPMCalvertCliffs Resource
- RidsNrrDorlLpl1-1 Resource
- ROPreportsResource@nrc.gov

SUNSI Review Complete: GSB (Reviewer's Initials)

ML093630305

DOCUMENT NAME: G:\DRP\BRANCH1\Calvert_Cliffs\Inspection Reports\CC PI&R NOV 2009\CC PIR 2009-007 Final Rev 1.doc

After declaring this document "An Official Agency Record", it **will be** released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRP	RI/DRP	RI/DRP
NAME	SBarber/ GTD for	GDentel/ GTD	RPowell/ RP
DATE	12/15/09	12/24 /09	12/29/09

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-317, 50-318

License Nos.: DPR-53, DPR-69

Report No.: 05000317/2009007 and 05000318/2009007

Licensee: Constellation Energy Nuclear Group, LLC (Constellation)

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

Location: Lusby, MD

Dates: November 2, 2009 through November 20, 2009

Team Leader: S. Barber, Senior Project Engineer, DRP

Inspectors: S. Pindale, Senior Reactor Inspector, DRS
M. Davis, Resident Inspector, DRP
S. Rich, Reactor Engineer, DRP

Approved by: Raymond J. Powell, Chief
Technical Support & Assessment Branch
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000317/2009007 and 05000318/2009007; 11/2/2009 – 11/20/09; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Identification and Resolution of Problems. One finding was identified in the area of corrective action program effectiveness.

This NRC team inspection was performed by one resident inspector and three regional inspectors. One finding of very low safety significance (Green) was identified by the NRC during this inspection and was classified as a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or assigned a severity level after NRC management review. The cross-cutting aspect was determined using IMC 0305, "Operating Reactor Assessment Program." 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.

Identification and Resolution of Problems

The inspectors concluded that Constellation was generally effective in identifying, evaluating and resolving problems. Specifically, Constellation personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Constellation appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, Constellation occasionally used generic operability statements as the basis for operability decisions which resulted in inadequately documented conclusions. Corrective actions taken to address the problems identified in Constellation's corrective action process were typically implemented in a timely manner. However, for one issue reviewed by the inspectors, inadequate implementation of corrective actions resulted in one NRC-identified finding. In another case, corrective action for risk assessment tool deficiencies were not fully effective.

The inspectors also concluded that, in general, Constellation adequately identified, reviewed, and applied relevant industry operating experience to CCNPP operations. In addition, based on those items selected for review by the inspectors, Constellation's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Cornerstone: Emergency Preparedness

Green. The inspectors identified a Green NCV of 10 CFR 50.54(q), for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE). Constellation's initial compensatory and corrective actions were inadequate because the compensatory action did not reflect the actual

global bay conditions, thereby preventing operators from correctly implementing the EAL; and the proposed corrective action, although not implemented, would have resulted in a decrease in effectiveness of the emergency plan. The immediate corrective actions included revising the compensatory measures to ensure that operators measure the bay water level at the appropriate location (i.e., in front of the trash racks). The planned corrective actions included installing a bay level monitoring system.

The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone and it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305). (Section 40A2.1.c)

Other Findings

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152B)

.1 Assessment of the Corrective Action Program (CAP) Effectiveness

a. Inspection Scope

The inspectors reviewed the procedures that describe Constellation's CAP at Calvert Cliffs Nuclear Power Plant (CCNPP) Units 1 and 2. Constellation identified problems for evaluation and resolution by initiating and processing condition reports (CRs) using the electronic performance improvement center (ePIC) web-based computer application. Problems were screened for operability and reportability, and evaluated by cause evaluation category (A to D) and their level of uncertainty. This evaluation was used to assign a significance level (1, most significant to 4, least significant) that determined the scope of the follow-up effort. When work was necessary to correct a problem, the work request system was used to generate work orders.

To assess the effectiveness of the CAP at CCNPP, the inspectors reviewed performance in three primary areas: problem identification, prioritization and evaluation, and corrective action (CA) implementation. The inspectors compared performance in these three areas to the requirements and standards contained in 10 CFR 50, Appendix B, Criterion XVI and Constellation procedure, CNG-CA-1.01-1000, "Corrective Action Program." The scope of the inspectors' review for each of these areas at CCNPP is described below. The CRs and other documents reviewed for the inspection are listed in the Attachment.

Effectiveness of Problem Identification

The inspectors reviewed a sample of CRs identified since the last NRC problem identification and resolution inspection performed in September 2007. The inspectors considered risk insights from the station's risk analysis and ensured that the selected CRs were appropriately distributed across the seven cornerstones of safety and were representative of deficiencies in the emergency preparedness, engineering, maintenance, operations, chemistry, physical security, and radiation protection functional areas. Inspectors' samples in these areas were focused on, but not limited to, the onsite and offsite electrical distribution power systems, emergency diesel generators (EDGs), the saltwater and service water systems, and the auxiliary feedwater (AFW) system.

In addition, the inspectors conducted a five year review of the overall readiness of the EDGs and the 120VAC Vital AC systems to perform their intended safety function. For these systems, the inspectors reviewed system health reports, sampled completed preventive and corrective maintenance work orders, and reviewed completed surveillance test procedures. The inspectors also completed a field walkdown of the accessible portions of the EDG and 120 VAC systems. The inspectors verified that conditions adverse to quality identified through this review were identified by Constellation and entered into the CAP, when appropriate.

The inspectors reviewed the results of Constellation's periodic trend analyses conducted in accordance with Constellation procedure, CNG-CA-1.01-1000, "Corrective Action Program." The inspectors verified that identified trends discussed in selected quarterly reviews of station focus areas were entered into the CAP for further evaluation and CA as appropriate.

The inspectors also verified that issues identified through internal self-assessments and audits and the operating experience (OE) program were entered into the CAP for evaluation and CA, as appropriate.

Effectiveness of Prioritization/Evaluation of Issues

To assess Constellation's effectiveness in the prioritization of issues, the inspectors observed seven daily condition report (CR) screening meetings and seven management review committee (MRC) meetings during the onsite weeks and reviewed the packages for a random sample of MRC meetings conducted since the last inspection. During these daily meetings, the CR screening committee (CRSC) reviewed new CRs for priority, significance, and department assigned. Subsequently, the MRC reviewed the same package of CRs and either confirmed or adjusted the work of the CRSC.

The issues and CRs reviewed encompassed the full range of evaluations, including root cause analysis reports (RCARs) with common cause analyses (CCAs), apparent cause evaluations (ACEs), programmatic issues, and hardware only (broke/fix) with trending. CRs that were assigned lower levels of significance that did not include formal cause evaluations were also reviewed by the inspectors to ensure they were appropriately classified. The inspectors' review included the appropriateness of the assigned significance, the scope and depth of the causal analysis, and the timeliness of resolution. The inspectors assessed whether the evaluations identified likely causes for the issues and whether Constellation developed appropriate CAs to address the identified causes. Further, the inspectors reviewed equipment operability determinations, reportability assessments, and extent-of-condition reviews for selected problems to verify these processes adequately addressed equipment operability, reporting of issues to the NRC, and the extent of problems. The inspectors also reviewed the licensee's response to deficiencies that warranted department clock resets.

The inspectors also reviewed the use of human performance observation cards to identify deficiencies during general work activities, foreign material exclusion activities, and lifting and rigging evolutions. These cards documented coaching of individual workers on various tasks including the feedback provided.

Effectiveness of CAs

The inspectors verified completion of CAs for a sample of CRs issued since the last NRC problem identification and resolution inspection that was performed in September 2007. CAs were verified to have been completed through documentation, and, in some cases, field walkdowns. The inspectors also reviewed a sample of incomplete CAs for CRs that were open for greater than two years. The inspectors selected these items based on risk significance, verified appropriate interim actions were in place and that the basis for not completing the remaining CAs were appropriately documented.

The inspectors reviewed CRs for adverse trends and repetitive problems to determine whether CAs were effective in addressing broader issues. The inspectors reviewed Constellation's timeliness in implementing CAs and effectiveness in precluding recurrence for significant conditions adverse to quality. The inspectors also reviewed a sample of CRs associated with selected non-cited violations (NCVs), findings, and licensee event reports, to verify that Constellation personnel properly evaluated and resolved these issues. In addition, the CA review was expanded to five years to evaluate Constellation's actions related to system performance issues identified for the EDGs and the 120VAC Vital AC systems.

b. Assessment

Effectiveness of Problem Identification

Based on the samples selected, the inspectors determined that, in general, Constellation identified problems and entered them into the CAP at a low threshold. Constellation personnel at CCNPP initiated approximately 20,000 CRs between September 2007 and November 2009. During the inspection, the inspectors reviewed approximately 150 CRs written during this time period. Based on this review and the review of the items discussed in the scope above, the inspectors determined that Constellation appropriately identified problems and documented them in CRs.

The inspectors also determined that Constellation trended equipment and programmatic issues in order to identify emerging issues at a low level. The trending process at CCNPP for the period reviewed was controlled by Constellation procedure, CNG-CA-1.01-1000, "Corrective Action Program." The inspectors concluded that, in accordance with Constellation procedures, Constellation personnel identified emerging trends at a low level and used the CAP to conduct evaluations and implement CAs when appropriate. The inspectors, based on the samples selected, also did not identify trends or repetitive issues that Constellation had not self-identified through its trending process.

Effectiveness of Prioritization and Evaluation of Issues

The inspectors determined, based on the samples selected, that Constellation, in general, appropriately prioritized and evaluated issues commensurate with the safety significance of the identified problem. CRs were screened for operability and reportability, categorized by significance, and assigned to a department for evaluation and resolution. The various CR screening and management review groups considered human performance issues, radiological safety concerns, repetitiveness, adverse trends, and potential impact on safety conscious work environment (SCWE) during the conduct of reviews.

Items reviewed by the inspectors during the inspection were categorized for evaluation and resolution commensurate with the significance of the issues. Guidance provided by Constellation procedure, CNG-CA-1.01-1000, "Corrective Action Program," for categorization appeared sufficient to ensure consistent implementation based on the sample of CRs reviewed by the inspectors. In general, issues were appropriately screened and prioritized commensurate with their safety significance.

The inspectors reviewed six root cause analyses with included common cause evaluations, five apparent cause analyses, and approximately ten individual CR

evaluations. For the evaluations reviewed, the inspectors noted that Constellation's evaluations were generally thorough and appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also noted that certain department deficiencies were effectively highlighted by department clock resets. Station managers used these resets to improve individual department performance.

With respect to operability evaluations, Constellation procedure, CNG-CA-1.01-1000, "Corrective Action Program," stated that the operating shift must evaluate whether or not the reported deficiency affected the operability of the system and document the basis for the determination. In addition, in cases where additional information was necessary to support the basis for operability, an action must be assigned to complete the more formal evaluation. For each of the CR cause analyses reviewed, the inspectors reviewed the completed operability evaluations and determined that, in general, the evaluations were appropriately performed. However, there were two exceptions where the bases for operability conclusions were insufficient. In particular, CR-2009-007880 (feedwater system snubber oil reservoir sightglass was empty) stated the snubber was operable because it was not a technical specification required snubber, although it was located on the safety-related portion of the system. The inspectors questioned this basis, and Constellation subsequently determined that operators used a snubber list from a technical database, and use of that list was inappropriate for the snubber operability basis. Constellation stated that the basis for the operability call should have been based on an actual inspection and analysis by an appropriately qualified individual. This snubber was in fact determined to be operable based on such an inspection and verification that there was sufficient oil contained in the snubber reservoir to perform its safety function. Constellation initiated CR-2009-008313 to evaluate and correct this operability determination deficiency.

The inspectors identified another operability determination (CR-2008-000824) that contained an insufficient basis related to a traveling water screen shear pin failure. The operability was based on the failure not affecting a safety-related component. Constellation acknowledged that the documented operability basis was insufficient and that operability was in fact based upon ultimate heat sink conditions (i.e., no debris) and acceptable system parameters (i.e., system flow, differential pressure). In addition, Constellation stated that an existing condition report (CR-2008-002168) had been initiated to address the concern of providing generic operability statements associated with operability calls.

The inspectors concluded that these two deficiencies were related only to the documented operability bases and there was no actual effect on equipment operability for these cases. Thus, Constellation demonstrated that system/component operability was maintained and has taken appropriate actions to address this issue. As such, these performance deficiencies are considered to be of minor significance and therefore, are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Effectiveness of CAs

The inspectors concluded that CAs for identified deficiencies were typically timely and adequately implemented. The inspectors also concluded that Constellation performed in-depth effectiveness reviews for significant issues to verify that implemented CAs were effective. However, the inspectors' review of the CR disposition documentation and verification of CA implementation, through a review of work orders and discussions with personnel involved, identified one minor violation and one finding of very low safety significance regarding CA implementation. The minor violation and finding of very low safety significance are described below.

The inspectors reviewed three condition reports (CRs) related to risk evaluations for on-line maintenance. The first CR (Issue Report Electronic (IRE)-029-320), written in February 2008, identified that on two occasions, the calculated on-line risk did not accurately reflect the actual plant risk because the existing maintenance activity impact model did not include the full scope of planned work. Later in 2008, Constellation implemented a new on-line risk model, the equipment out-of-service (EOOS) probabilistic risk assessment tool, in order to improve their on-line risk assessment capabilities. In April 2009, Constellation documented a series of modeling deficiencies in a second CR (CR-2009-002862), which indicated that the EOOS program did not accurately reflect on-line risk when isolating the AFW ventilation system, the 21 charging pump, or both motor-driven AFW pumps. This and the previous CR constituted non-cited violations (NCVs) of 10 CFR 50.65(a)(4) and were previously documented as NCVs. The issues identified by the first CR were documented as NCV 05000317&318/2008002-02 and the charging pump issue identified by the second CR was documented as NCV 05000318/2009002-02. Recently, in a third CR (CR-2009-005947), written in August 2009, another modeling deficiency was identified. Specifically, the work activity did not have an attached code to identify which system would be taken out of service during the work. The system had to be put in manually to the EOOS program and the wrong system was entered. The error was identified on the second day of work. While this deficiency was different from those previously documented, it was still indicative of modeling weaknesses with the EOOS program. Because Constellation continued to experience modeling deficiencies even after the corrective actions were put in place, the scope of the corrective actions did not fully address the problem. CR-2009-008334 was written to address this issue.

The inspectors independently evaluated the most recent CR for significance in accordance with IMC 0612, Appendix B, "Issue Screening," and IMC 0612, Appendix E, "Examples of Minor Issues." This condition had no impact on plant operations because when the condition was reassessed with the correct data, there was no change in on-line risk. Therefore, this issue is of minor significance, and, as a result, is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

c. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR 50.54(q) for Constellation's failure to maintain the Emergency Plan to adequately meet the standards in 50.47(b). Specifically, Constellation failed to correct a condition related to not having a clear method to assess and determine the bay water level emergency action level (EAL) entry criteria for an Unusual Event (UE).

Description: The inspectors reviewed a previous Green NCV and finding (00050317 & 00050318/2008003-02) identified on June 23, 2008. The Green NCV documented a violation of 10 CFR 50.47(b)(4) and 10 CFR 50, Appendix E, Sections IV.B and IV.C because Constellation did not have a clear method to determine and assess bay water level such that the EAL classification scheme would declare a UE in a timely manner. While permanent corrective actions were being developed for this NCV, Constellation established compensatory measures for operators to monitor the predicted bay water level once a shift, which required a manual measurement of bay level on the plant side of the traveling screens and trash racks when low bay level conditions existed.

The inspectors reviewed the apparent cause evaluation, the proposed corrective actions, and the existing compensatory measures associated with the Green NCV and finding. The inspectors determined that the proposed corrective actions for this NCV were inadequate because the removal of the bay level scheme from the EAL table would have constituted a decrease in effectiveness of the emergency plan. Fortuitously, Constellation had not yet implemented these actions prior to identifying this potential decrease in effectiveness of the emergency plan during a problem identification and resolution self-assessment on June 25, 2009, and initiated a condition report (CR-2009-004508). Notwithstanding this action, Constellation did not review the adequacy of the existing compensatory measures for low bay level at that time and the inspectors concluded that they were inadequate because of two factors. The first factor was that operators were required to monitor predicted bay water level at Solomon's Island and not actual bay level at the plant. There have been previous circumstances when actual level differed from predicted level by approximately two feet. The second factor was that the compensatory measure directed that bay water level be measured behind the traveling screens and trash racks, and that location did not accurately reflect actual global bay conditions. These concerns were conveyed to Constellation during the inspection and Constellation immediately amended the compensatory action to monitor both the predicted and actual bay level, and changed the monitoring location to the bay side of the trash racks. Additionally, Constellation developed new corrective actions to include the installation of a bay level monitoring system to address the original NCV. Constellation entered these issues into their corrective action program as CR-2009-008063 and CR-2009-008030.

Analysis: The performance deficiency is that Constellation did not promptly identify and correct a decrease in effectiveness of the Emergency Plan related to the bay water level EAL criteria. Specifically, Constellation did not take adequate corrective actions to correct a problem related to how they assess and determine bay water level to ensure, when appropriate, that a UE is declared in a timely manner. The corrective actions proposed to resolve the problem and the compensatory measures were inadequate. The inspectors determined that this finding was more than minor because it was associated with the facilities and equipment attribute of the Emergency Preparedness cornerstone, and it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of intake bay level could have resulted in the failure to declare a UE. The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Constellation's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1, "Failure to Comply." Section 4.4 of IMC 0609, Appendix B, provides examples for use in assessing emergency preparedness

findings. One example of a Green finding states, "The EAL classification process would not declare any alert or notification of unusual event that should be declared." Since the declaration of a UE based on low bay level could have been missed or delayed, this finding was considered consistent with the example provided and was therefore determined to be of very low safety significance.

This finding had a cross-cutting aspect in the area of problem identification and resolution because Constellation did not take appropriate corrective action to address this safety issue in a timely manner, commensurate with its safety significance and complexity. (P.1.d of IMC 0305).

Enforcement: 10 CFR Part 50.54(q) states, in part, that a licensee shall follow and maintain in effect emergency plans which meet the standards in 10 CFR 50.47(b). Contrary to this requirement, Constellation did not follow and maintain in effect emergency plans which met the standards in 10 CFR 50.47(b). Specifically, as of November 6, 2009, Constellation did not correct a condition which prevented the accurate assessment of bay water level EAL criteria, as required by the Calvert Cliffs Emergency Plan. Specifically, Constellation did not take adequate corrective actions to correct the problem on how they assess and determine the bay water level to declare a UE in a timely manner. The corrective actions proposed to resolve the problem were not completed and the compensatory measures were inadequate. Therefore, no adequate corrective actions were assigned to resolve the issue. Because this violation is of very low safety significance (Green) and Constellation entered the issue into their CAP (CR-2009-008030 and CR-2009-008063), this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000317 & 318/2009007-01: Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria)**

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors selected a sample of industry operating experience (OpE) issues to confirm that Constellation evaluated the OpE information for applicability to CCNPP and took appropriate actions when warranted. The inspectors reviewed OpE documents to verify that Constellation properly considered the underlying problems associated with the issues for resolution using the corrective action and OpE programs. The inspectors also observed the OpE screening committee meetings to assess Constellation's review of OpE. The documents reviewed are included in the Attachment.

b. Assessment

The inspectors determined that Constellation appropriately considered and evaluated OpE information for applicability to CCNPP, and used the information to develop corrective actions to prevent similar problems. The OpE screening committee meetings were effective at assessing the significance of OpE and its applicability to CCNPP. Overall, the inspectors concluded that Constellation appropriately applied and incorporated relevant OpE insights into station operations. However, the inspectors identified a process vulnerability in which review of one type of OpE could be delayed. In particular, administrative controls lacked specificity for processing 10 CFR Part 21 reports that identified CCNPP as being potentially affected. While the majority of Part 21 applicability reviews are addressed using the OpE program, those that specifically

identify CCNPP as being potentially affected are sent directly to the Director, Materials and Services. The controlling administrative procedure requires that these notifications be documented and processed according to the CAP. The intent of this statement is to initiate a prompt review to assess potential immediate operability concerns. However, the inspectors identified an instance where Constellation's responses to such notifications were delayed. For example, a July 18, 2007, Part 21 report was issued related to a concern with power operated relief valves that potentially affected CCNPP. Although this report was sent to the appropriate Constellation individual, an associated CR was not initiated until July 24, 2007. The prompt initiation of a CR is important because that is where a prompt operability decision is made. In response to this concern, Constellation initiated CR-2009-008317 to evaluate revising the governing administrative procedure to specifically require the immediate initiation of a CR to process the CCNPP-affected Part 21 report, which will ensure a prompt operability review.

The inspectors independently evaluated the July 2007 issue for significance in accordance with IMC 0612, Appendix B, "Issue Screening," and IMC 0612, Appendix E, "Examples of Minor Issues." In this particular instance, CCNPP had already known of the problem, and had an existing operability assessment to address the concern, and therefore it did not have a significant impact on plant operations. As such, this issue is of minor significance, and, as a result, it is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

c. Findings

No findings of significance were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed a sample of audits, including the most recent audit of the CAP, departmental self-assessments, and assessments performed by independent organizations. These reviews were performed to determine if problems identified through these assessments were entered into the CAP when appropriate and whether CAs were initiated to address identified deficiencies. The effectiveness of the audits and assessments was evaluated by comparing audit and assessment results against self-revealing and NRC-identified observations made during the inspection. A list of documents reviewed is included in the Attachment to this report.

b. Assessment

The inspectors concluded that self-assessments, audits, and other internal Constellation assessments were generally critical, probing, thorough, and effective in identifying issues. The inspectors observed that these audits and self-assessments were completed in a methodical manner by personnel knowledgeable in the subject. The audits and self-assessments were completed to a sufficient depth to identify issues that were entered into the CAP for evaluation. In general, CAs associated with the identified issues were implemented commensurate with their safety significance.

c. Findings

No findings of significance were identified.

4. Assessment of SCWE

a. Inspection Scope

The inspectors reviewed the SCWE at CCNPP through conduct of the following activities:

During the inspection, the inspectors conducted interviews with selected operations, maintenance, engineering, and emergency preparedness staff. The inspectors questioned individuals regarding their willingness to raise safety concerns, knowledge of the avenues available for raising safety concerns, the effectiveness of actions taken by management to foster a SCWE at the site, and any knowledge of personnel who had experienced a negative reaction for raising a safety concern.

The inspectors also reviewed implementation of the site employee concerns program (ECP) by reviewing the site procedure for conducting ECP investigations and then reviewing a sample of ECP files for the period between September of 2007 and November of 2009 to assess the program's effectiveness at addressing potential safety issues.

The inspectors reviewed the results of the site nuclear safety culture survey performed in June 2009 and the CAs generated after Constellation reviewed the survey results.

b. Assessment

Based on interviews and reviews of the CAP and the ECP, the inspectors determined that station staff were willing to identify and raise safety issues. Most of those interviewed demonstrated an adequate knowledge of the avenues available for raising safety concerns including the CAP and ECP. In addition, comparisons of CCNPP ECP files to NRC allegation information did not identify any impediments to the free flow of information at CCNPP.

Some personnel interviewed were not familiar with how to raise a concern by using the ECP. However, they stated that their supervisors had consistently resolved their concerns in a timely manner. In one instance, an individual and his supervisor were successful in getting a major project added back into a refueling outage to ensure that an existing issue with reactor coolant pumps was adequately resolved.

The inspectors determined that the results of the nuclear safety culture surveys conducted in June 2009 provided Constellation insights into the safety culture of the site workforce. Based upon the results of these surveys, Constellation determined that overall, CCNPP was generally aligned with the principles of a strong nuclear safety culture.

Notwithstanding the strong overall SCWE, the inspectors did identify a number of minor deficiencies including:

- CNG-QL-3.01-1001, "Employee Concerns Program," recommends, in part, that any issues involving nuclear safety or quality (NSQ) concerns be prioritized as Priority 1 and fully investigated within 30 days, while those that do not involve NSQ issues be prioritized as Priority 2 and fully investigated within 45 days. The inspectors noted that neither the ECP files nor program documentation identified these priorities. However, the inspector did note that all of the files that were reviewed were investigated in a timely manner. CR-2009-007933 was written to document this deficiency and this condition was promptly corrected.
- During interviews, most of the in-plant staff were unaware of the location of the ECP office and only a few knew the ECP program manager by name. However, the staff stated that their supervisors had consistently resolved their concerns in a timely manner. The inspectors verified that this information had been previously covered in general employee training. CR-2009-007991 was written to document this deficiency.
- CNG-QL-3.01-1001, "Employee Concerns Program," specifies that all new supervisors receive training on the ECP within six months of becoming a new supervisor. This activity was scheduled in conjunction with other new supervisor training that had to be done within 12 months of becoming a new supervisor. Thus, the ECP training was not consistently accomplished within six months. CR-2009-008309 was written to document this deficiency.

The inspectors reviewed these issues and determined that none of these issues involved violations of regulatory requirements.

c. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On November 20, 2009, the inspectors presented the inspection results to Mr. J. Spina, Site Vice President, and other members of the CCNPP staff. The inspectors confirmed that proprietary information was reviewed by inspectors during the course of the inspection, that any proprietary information that was reviewed was returned to Constellation, and that the content of this report includes no proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT**Licensee personnel

J. Spina, Site Vice President
 D. Trepanier, Plant General Manager
 J. Wilson, Engineering Supervisor
 P. Amos, Director, Performance Improvement
 J. Branyan, Senior Engineering Analyst
 A. Simpson, Licensing Engineer
 L. Larragoite, Consultant
 P. Fatka, System Manager
 S. Fleshman, Work Group Leader, Operations Procedure Support
 J. Gaines, General Supervisor, Operations Support
 T. Gary, Senior Chemistry Analyst
 R. Gines, Engineer
 C. Grooms, General Supervisor, Operations Support
 R. Kreger, Senior Performance Improvement Analyst
 B. Lang, Principle Engineer
 S. Loeper, System Manager
 T. Rogers, Director, Materials and Services
 W. Rummel, Operations Performance Improvement Coordinator
 J. Schoolcraft, Principal Engineering Analyst

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDOpened and Closed

05000317, 318/2009007-01	NCV	Inadequate Corrective Actions for Bay Water Level EAL Entry Criteria (Section 4OA2.1.c.)
--------------------------	-----	--

LIST OF DOCUMENTS REVIEWED**Section 4OA2: Identification and Resolution of Problems**Audits and Self-Assessments

DES-08-01-C, "Engineering and Design Programs"
 EPP-07-01-C, "Emergency Preparedness Program Audit," dated 10/10/07
 EPP-08-01-C, "Emergency Preparedness Audit," dated 09/12/08
 MAI-09-01-C, "Maintenance Audit," dated 5/1/09
 OPS-08-01-C, "Nuclear Operations Program"
 Q&PA Assessment Report 2007-062, "Maintenance Efficiency/Backlog Reduction"
 Q&PA Assessment Report 2007-069, "ERO Focused Drill"
 Q&PA Assessment Report 2008-004, "Category I and II Condition Report Action Items"

Q&PA Assessment Report 2008-009, "Operations Self Assessments and Benchmarking"
 Q&PA Assessment Report 2008-042, "Corrective Action Item Closure"
 Q&PA Assessment Report 2008-050, "Maintenance – yellow grade – corrective actions"
 Q&PA Assessment Report 2008-054, "Electronic Performance Improvement Center (ePIC)
 Implementation Readiness"
 Q&PA Assessment Report 2008-057, "Long Term Corrective Actions"
 Q&PA Assessment Report 2008-062, "Security's Use of Operating Experience"
 Q&PA Assessment Report 2008-063, "June 2008 EP graded exercise"
 Q&PA Assessment Report 2008-075, "RP Job Coverage"
 Q&PA Assessment Report 2008-093, "Engineering Self Assessments/Benchmarking"
 Q&PA Assessment Report 2008-094, "Licensed Operator Initial Training Root Cause Analysis"
 Q&PA Assessment Report 2008-095, "Maintenance self assessments"
 Q&PA Assessment Report 2008-100, "Chemistry Self-Assessments and Benchmarking"
 Q&PA Assessment Report 2008-111, "Operations Condition Report/Corrective Actions Review"
 Q&PA Assessment Report 2009-031, "Periodic Condition Report Reviews"
 Q&PA Assessment Report 2009-035, "Engineering and Chemistry Condition Report/Corrective
 Action Review"
 RPP-07-01-C, "Radiation Protection Program Audit", dated 10/26/07
 SA-2008-000027, "Primary Chemistry Program Focused Self-Assessment"
 SA-2008-000033, "Maintenance Rule (a)(3) Assessment Report"

Condition Reports (CR)

AI-2008-000984	IRE-028-539	CR-2008-000447	CR-2008-002415
IR-2007-00152	IRE-029-018	CR-2008-000517	CR-2008-002472
IRE-001-576	IRE-029-320	CR-2008-000550	CR-2008-002842
IRE-002-302	IRE-029-339	CR-2008-000558	CR-2008-002938
IRE-002-304	IRE-029-507	CR-2008-000686	CR-2008-003049
IRE-004-820	IRE-029-511	CR-2008-000701	CR-2008-003109
IRE-007-111	IRE-029-910	CR-2008-000750	CR-2009-000202
IRE-009-147	IRE-030-317	CR-2008-000772	CR-2009-000269
IRE-018-033	IRE-030-493	CR-2008-000796	CR-2009-000397
IRE-018-656	IRE-030-714	CR-2008-000824	CR-2009-000706
IRE-019-693	IRE-030-999	CR-2008-000837	CR-2009-000856
IRE-021-085	IRE-031-070	CR-2008-000849	CR-2009-000984
IRE-021-614	IRE-031-269	CR-2008-000928	CR-2009-000991
IRE-023-436	IRE-031-296	CR-2008-001022	CR-2009-001068
IRE-024-018	IRE-031-605	CR-2008-001100	CR-2009-001184
IRE-025-292	IRE-031-916	CR-2008-001178	CR-2009-001376
IRE-027-122	IRE-032-330	CR-2008-001308	CR-2009-001411
IRE-027-159	IRE-032-433	CR-2008-001386	CR-2009-001524
IRE-027-260	IRE-032-449	CR-2008-001681	CR-2009-001657
IRE-027-489	IRE-032-462	CR-2008-001683	CR-2009-001669
IRE-027-571	IRE-032-512	CR-2008-001761	CR-2009-001928
IRE-027-718	IRE-032-546	CR-2008-002057	CR-2009-002010
IRE-027-939	IRE-032-780	CR-2008-002147	CR-2009-002012
IRE-028-222	IRE-033-089	CR-2008-002168	CR-2009-002604
IRE-028-535	CR-2008-000127	CR-2008-002321	CR-2009-002722
IRE-028-537	CR-2008-000149	CR-2008-002366	CR-2009-002811
IRE-028-538	CR-2008-000176	CR-2008-002368	CR-2009-002841

CR-2009-002862	CR-2009-004452	CR-2009-005947	*CR-2009-008309
CR-2009-002894	CR-2009-004508	CR-2009-006047	*CR-2009-008313
CR-2009-002913	CR-2009-004733	CR-2009-006746	*CR-2009-008317
CR-2009-002977	CR-2009-004927	CR-2009-007880	*CR-2009-008319
CR-2009-002986	CR-2009-004933	*CR-2009-007933	*CR-2009-008334
CR-2009-003053	CR-2009-005137	*CR-2009-007969	*CR-2009-008374
CR-2009-003054	CR-2009-005692	*CR-2009-007991	*CR-2009-008375
CR-2009-003588	CR-2009-005837	*CR-2009-008029	*CR-2009-008415
CR-2009-003660	CR-2009-005894	*CR-2009-008030	*CR-2009-008419
CR-2009-004116	CR-2009-005905	*CR-2009-008063	

*Identified during this inspection

Drawings

OM-462SH0001, Safety Injection and Containment Spray Systems, Unit 2, Rev. 75

Miscellaneous

12310-168VTM, Emergency Diesel Generator Vendor Manual, 10/20/86
 Alloy 600 Program Plan, Rev. 00600
 CGG Corporate CR-2009-000207
 Chemistry Human Performance Section/Unit/Crew Goals and Records, 11/16/2009
 Chemistry Performance Improvement Program Meeting Minutes, 05/11/2009, 08/18/2009,
 09/16/2009, 10/12/2009, 11/10/2009
 Quarterly System Health Reports, Unit 1 and 2 Emergency Diesel Generators, from 1st Quarter
 2004 - 3rd Quarter 2009
 Plant Health Committee Meeting Minutes, 11/17/2008
 RPPG-01-013, S/G Primary Side Work, Rev. 0
 System Health Reports, Units 1 and 2, System 018, Vital Instrument AC, dated from April 2005
 to September 2009

Non-Cited Violations

NCV 05000318/2007005-03, Reactor Operation above Licensed Power Limit
 NCV 05000317&318/2008002-02, Inadequate Risk Assessment Associated with the 2A
 Emergency Diesel Generator
 NCV 05000317&318/2008002-04, Inadequate Procedures for Draining and Venting the Reactor
 Coolant System
 NCV 05000317&318/2008003-02, Inadequate Measures to Implement EALs for Low Bay Water
 Level
 NCV 05000317/2008004-01, Failure to Identify and Correct a Degraded 12 CCHX SW Outlet
 Valve Positioner in a Timely Manner
 NCV 05000317&318/2008005-02, Untimely Corrective Actions Associated with 480 Volt Power
 Supply Handswitch Disconnects
 NCV 05000318/2009002-02, Inadequate Risk Assessment Associated with the No. 21 Charging
 Pump
 NCV 05000317/2009002-03, Did Not Comply with Technical Specification Requirements While
 Starting Reactor Coolant Pumps
 NCV 05000318/2009002-04, Failed to Follow Radiation Procedures

Operating Experience

- OE-2008-000055, "NRC Information Notice 2008-13: Main Feedwater System Issues and Related 2007 Reactor Trip Data"
- OE-2009-000544, "Information Notice 09-02, Biodiesel in Fuel Oil Could Adversely Impact Diesel Engine Performance"

Procedures

- CNG-CA-1.01-1000, "Corrective Action Program," Rev. 00200
- CNG-CA-1.01-1010, "Use of Operating Experience," Rev. 00200
- CNG-CA-1.01-1001, "Management Review Committee," Rev. 0001
- CNG-CA-1.01-1003, "Performance Improvement Coordinators," Rev. 00000
- CNG-CA-1.01-1004, "Root Cause Analysis," Rev. 00300
- CNG-CA-1.01-1005, "Apparent Cause Evaluation," Rev. 00200
- CNG-CA-1.01-GL003, "Operating Experience Barrier Analysis Template," Rev. 00000
- CNG-CA-2.01-1000, "Self-Assessment and Benchmarking Process," Rev. 00200
- CNG-HU-1.01-1000, "Human Performance Tools and Verification Practices," Rev. 00500
- CNG-OP-3.01-1000, "Reactivity Management," Rev. 00100
- CNG-QL-3.01-1001, "Employee Concerns Program," Rev. 00100
- CP-0401, "Nuclear Steam Supply System Sampling," Rev. 00800
- OI-1A, "Reactor Coolant System and Pump Operations," Rev. 34
- Operations Administration Policy 04-01, "Managing Operator Impacts," Change 5 (11/24/08)
- PM-1-101, "Procurement and Control of Items and Services for Calvert Cliffs," Rev. 9
- RSP 1-132, "Job Coverage in Radiological Controlled Areas," Rev. 13
- RWP 2009-2408, "Installation and Removal of Steam Generator Nozzle Dams," Rev. 0
- STP O-65-2, "HPSI and LPSI CKV Closure Test," Rev. 04101
- STP O-65-2, "HPSI and LPSI CKV Closure Test," Rev. 04102
- STP O-65-2, "HPSI and LPSI PP CKV Closure Test," Rev. 40
- STP-O-67C-2, "Miscellaneous Check Valve Test," Rev. 00801

Completed Surveillances

- O-090-1 AC Sources and Onsite Power Distribution Systems 7 Day Operability Verification, Rev. 02202, completed 10/27/05, 04/30/06, 11/08/06, 12/03/06, 03/26/07, 11/18/07, 09/21/08, 11/23/08, 04/05/09, 05/10/09
- O-090-2 AC Sources and Onsite Power Distribution Systems 7 Day Operability Verification, Rev. 02202, completed 12/27/05, 04/30/06, 06/18/06, 12/17/06, 01/21/07, 04/22/07, 10/28/07, 08/17/08, 12/21/08, 05/10/09
- O-4B-1 "B" Train Integrated Engineered Safety Features Test, Rev. 26, 03/31/06
- O-4B-1 "B" Train Integrated Engineered Safety Features Test, Rev. 28, 03/10/08
- O-4B-2 "B" Train Integrated Engineered Safety Features Test, Rev. 29, 03/10/09
- O-4B-2 "B" Train Integrated Engineered Safety Features Test, Rev. 27, 03/29/07
- O-8B-1 Test of 1B DG and 14 4KV Bus Loci Sequencer, Rev. 26, completed monthly between Jan 2006 and July 2007
- O-8B-2 Test of 2B DG and 24 4KV Bus Loci Sequencer, Rev. 25, completed monthly between Jan 2006 and July 2007

Work Orders

C220034545
 C220050052
 C220050053
 C220052633
 C220054673
 C220073081
 MO 2200803299

LIST OF ACRONYMS

ADAMS	Agency-Wide Documents Access and Management System
AFW	Auxiliary Feedwater
CA	Corrective Action
CAP	Corrective Action Program
CCNPP	Calvert Cliffs Nuclear Power Plant
CFR	Code of Federal Regulations
CR	Condition Report
CRSC	Condition Report Screening Committee
EAL	Emergency Action Level
ECP	Employee Concerns Program
EDG	Emergency Diesel Generator
EOOS	Equipment Out-of-Service
EP	Emergency Preparedness
ePIC	Electronic Performance Improvement Center
IMC	Inspection Manual Chapter
IRE	Issue Report Electronic
MRC	Management Review Committee
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OI	Operating Instruction
OpE	Operating Experience
PARS	Publicly Available Records
RCAR	Root Cause Analysis Report
SCWE	Safety Conscious Work Environment
SDP	Significance Determination Process
UE	Unusual Event