

July 30, 2008

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

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT – NRC EVALUATION OF
CHANGES, TESTS, AND EXPERIMENTS AND PERMANENT
MODIFICATIONS TEAM INSPECTION REPORT 05000317/2008009 and
05000318/2008009

Dear Mr. Spina:

On June 20, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Calvert Cliffs Nuclear Power Plant. The enclosed inspection report documents the inspection results, which were discussed on June 20, 2008, with Mr. D. Bauber 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 team reviewed selected procedures, calculations and records, observed activities, and interviewed station personnel.

This report documents one self-revealing finding which was of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance of the violation and because it was entered into your correction action program, the NRC is treating it as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV or the finding 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 U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, Region 1; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspectors at the CCNPP.

Mr. J. Spina

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Sincerely,

/RA/

Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No: 50-317/318
License No: DPR-53, DPR-69

Enclosure: Inspection Report 05000317/2008009 and 05000318/2008009
w/Attachment: Supplemental Information

Mr. J. Spina

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Mr. J. Spina

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Mr. J. Spina

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REGION I

Docket No: 50-317, 50-318

License No: DPR-53, DPR-69

Report No: 05000317/2008009 and 05000318/2008009

Licensee: Constellation Energy

Facility: Calvert Cliffs Nuclear Power Plant

Location: 1650 Calvert Cliffs Parkway
Lusby, MD 20657

Dates: June 2, 2008 through June 20, 2008

Inspectors: K. Mangan, Senior Reactor Inspector (Team Leader)
K. Young, Senior Reactor Inspector
O. Ayegbusi, Reactor Inspector
S. Smith, Reactor Inspector (in-training)

Approved by: Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000317/2008-009, 05000318/2008-009; 06/02/2008 - 06/20/2008; Calvert Cliffs Nuclear Power Plant Units 1 & 2; Followup of Events and Notices of Enforcement Discretion

The report covers a two week team inspection of the Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications. Additionally Temporary Instruction 2515/166 and Followup of Events and Notices of Enforcement Discretion inspections were conducted. The inspections were conducted by three region based engineering inspectors, and one inspector in-training. One finding of very low risk significance (Green) was identified; it was considered to be a non-cited violation. The significance of 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

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

The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability during power operations. Specifically, opening of the pressurizer safety valve increased the likelihood of a stuck open relief valve event. The finding was evaluated using Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and determined to be of very low safety significance because the deficiency was not associated with increased reactor coolant system leakage and would not have caused other mitigating systems to fail. (Section 40A3)

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications (IP 71111.17)

.1 Evaluations of Changes, Tests, or Experiments (23 samples)

a. Inspection Scope

The team reviewed four safety evaluations to determine whether the changes to the facility or procedures, as described in the Updated Final Safety Analysis Report (UFSAR), had been reviewed and documented in accordance with 10 CFR 50.59. In addition, the team evaluated whether Constellation had been required to obtain NRC approval prior to implementing the change. The team interviewed plant staff and reviewed supporting information including calculations, analyses, design change documentation, procedures, the UFSAR, technical specifications (TS), and plant drawings, to assess the adequacy of the safety evaluations. The team compared the safety evaluations and supporting documents to the guidance and methods provided in Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Evaluations," as endorsed by NRC Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," to determine the adequacy of the safety evaluations.

The team also reviewed a sample of nineteen 10 CFR 50.59 screenings and applicability determinations for which Constellation had concluded that no safety evaluation was required. These reviews were performed to assess whether Constellation's threshold for performing safety evaluations was consistent with 10 CFR 50.59. The sample of issues inspected that had been screened out by Constellation included design changes, calculations, temporary alterations and setpoint changes.

The reviewed safety evaluations were the only safety evaluations Constellation had performed during the time period covered by this inspection (i.e., since the last modifications inspection). The screenings and applicability determinations were selected based on the risk significance of the associated structures, systems, and components (SSCs).

In addition, the team compared Constellation's administrative procedures, used to control the screening, preparation, review, and approval of safety evaluations, to the guidance in NEI 96-07 to determine whether those procedures adequately implemented the requirements of 10 CFR 50.59. The reviewed safety evaluations, screenings, and applicability determinations are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications (8 samples)

.2.1 Charging Pump Discharge Piping Gauge Installation and Removal

a. Inspection Scope

The team reviewed the modification to install and remove pressure gauges on the discharge piping for each charging pump on Unit 1 and Unit 2. The team determined the modification was performed to assist operators in analyzing whether idle charging pumps needed to be vented to remove trapped gasses prior to the pumps air-binding and becoming inoperable. Subsequently, the licensee determined use of the gauges was no longer required and the gauges were removed from the system. The team assessed whether the design and licensing bases, and performance capability of the charging system had been degraded by the change following both the installation of the gauges and the subsequent removal. In addition, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team also assessed if the licensee's actions following removal of the gauges were adequate to address potential air-binding of the standby charging pumps. The team interviewed system engineers to determine what actions had been taken to address the pump voiding issue. Finally, the team verified procedural guidance had been updated, and reviewed past operating experience to verify the actions taken would ensure the charging pumps remained operable. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.2 Modification to Remove Interim Office Building (IOB) and the Associated Fire Detection/Suppression Systems

a. Inspection Scope

The team reviewed a modification associated with removal of the interim office building (IOB). The removal of the IOB included removal of the fire protection (detection and suppression) systems in the IOB. The team assessed whether the design and licensing bases, and performance capability of plant fire protection system had been degraded by the modification. In addition, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team assessed selected attributes of the modification to determine whether they were consistent with the design and licensing bases. These attributes

included fire protection defense-in-depth features (to detect and suppress fire) and the ability to ensure the capability to shut down the plant and maintain it in a safe shutdown condition in the event of fire. Design assumptions were reviewed to evaluate whether they were technically appropriate and consistent with the UFSAR. The team reviewed selected calculations, drawings, analysis, procedures, and the UFSAR to determine whether they were properly updated with revised design information and operating guidance. The team evaluated the fire main loop flow, and fire pump pressure and flow surveillance testing to determine whether the removal of the suppression system in the IOB affected the function of the plant fire protection system in accordance with the design assumptions. Additionally, the team reviewed circuit revisions in fire panel 1PNL1fp86 to ensure appropriate fire annunciation following removal of the IOB portion of the fire detection system. The team walked down the SSCs to detect possible abnormal installation conditions. Finally, the team discussed the effect of the modification on the system design basis with design engineers and the site fire marshal. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.3 Containment Permanent Scaffolding Analyses

a. Inspection Scope

The team reviewed an analysis, ES200400579 - Support Permanent Scaffolding for Unit 1 & 2, to determine whether it was technically adequate. The analysis was performed to support a modification to erect scaffolds intended to be installed in the Unit 1 & 2 containment during all modes of operation. The team reviewed the analysis to determine whether it had adequately assessed whether the design and licensing bases, and performance capability of the Unit 1 & 2 containment systems had been degraded by the modification. In addition, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team evaluated the analysis to determine whether the assumptions were appropriate and valid. Specifically, design inputs, such as containment temperature, seismic qualification, and scaffold weight were reviewed to determine whether they were conservative and consistent with the design and licensing bases. In addition, the team reviewed the Permanent Scaffold Procedure MN-1-203 to determine whether the guidance had been updated and the list of current permanent scaffolds installed was accurate. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.4 Instrument Air Dryer Purge Exhaust Line Modification

a. Inspection Scope

The team reviewed a modification to the Unit 1 & 2 instrument air dryers. The modification installed an automatic purge isolation valve on each instrument air dryer purge line to prevent dryer blow down on a loss of system air pressure or pilot air pressure. The team assessed whether the design and licensing bases, and performance capability of plant instrument air had been degraded by the modification. In addition, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team assessed selected attributes of the modification process to determine whether they were consistent with the design and licensing bases. These attributes included pre and post modification walk-downs, design evaluation, failure effects analysis, electrical wiring schematics, and post installation testing. Design assumptions were reviewed to evaluate whether they were technically appropriate and consistent with the UFSAR. The team reviewed selected drawings, analysis, procedures, and the UFSAR to determine whether they were properly updated with revised design information and operating guidance. The team also discussed the modification and design basis with system engineers to assess the effectiveness of the modification. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.5 Install Variable Frequency Drive Units & Motors on 26A/B Traveling Screens

a. Inspection Scope

The team reviewed modifications associated with the installation of variable frequency drives, programmable logic controllers (PLC) and the alternate power supply for two intake structure traveling screens. The review was performed to determine whether the design basis, licensing basis, and performance capability of the intake screens and associated cooling systems had been degraded by the modification. Additionally, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team verified the installation was in accordance with the manufacturer specifications. Additionally, the team reviewed post maintenance testing on the installed equipment to verify the system would work as designed. The team also reviewed licensing documents to ensure the change did not adversely impact assumptions in those documents. Finally, the team walked down the installed component to determine the adequacy of the installation and if there was a potential for environmental hazards affecting the performance of the equipment. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.6 Install 1" Vent line and Valve in Shutdown Cooling Line

a. Inspection Scope

The team reviewed a modification that installed a 1" vent line and isolation valve on the shutdown cooling piping. The valve was installed to allow for venting gasses from the cooling line when the shutdown cooling system must be refilled. The review was performed to determine whether the design and licensing bases, and performance capability of the shutdown cooling and low pressure injection system had been degraded by the modification. Additionally, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team verified the modifications were performed in accordance with ASME requirements. Specifically, the team reviewed the post modification testing to ensure that it was adequate to show operability prior to restoring the system to service. The team also reviewed the material used for the installation to ensure it was compatible with the safety requirements of the system. Finally, the team assessed selected design inputs in the supporting design analysis to determine whether they were consistent with the assumptions in the design methodology. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2.7 Modification to Incorporate Electrical Interlocks Into the Control Schemes for 13 kV Vacuum Breakers 252-1106 and 252-2106

a. Inspection Scope

The team reviewed a modification to incorporate electrical interlocks into the control schemes for 13 kV breakers 252-1106 and 252-2106 to prevent inadvertent parallel of the number 11 and number 21 busses via the site power distribution system when either bus is powered from the Southern Maryland Electric Cooperative (SMECO) dedicated feeder. The review was performed to determine whether the design and licensing bases, and performance capability of the 13 kV electrical distribution system had been degraded by the modification. Additionally, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team assessed selected design inputs and attributes to determine whether they were consistent with the design and licensing bases. These attributes included component safety classification, establishing appropriate procedure guidance to avoid inadvertent paralleling of the 13 kV site and SMECO electrical

distribution systems, and control logic function of the close permissive interlocks. The team evaluated design assumptions in the supporting evaluations and analyses to determine whether they were technically appropriate and consistent with the UFSAR. The team reviewed selected evaluations, drawings, analysis, procedures, and the UFSAR to determine whether they were properly updated. The team evaluated the post-modification tests to determine whether the close permissive interlocks would function in accordance with the design assumptions to determine the effectiveness of the modification. In addition, the team interviewed the responsible design and system engineers to determine the effectiveness of the modification. The also team walked down the structures, systems and components to detect possible abnormal installation conditions. Finally, the team verified that Constellation had plans in place to implement this modification function into the simulator for operator training purposes. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

2.8 Switchgear Room HVAC Control Circuit Fuse Modification

a. Inspection Scope

The team reviewed a modification to the Unit 1 & 2 safety related switchgear room heating, ventilation and air-conditioning (HVAC) units. The modification resized the control circuit protective fuse to increase the margin between the normal running current and the fuse trip current. Additionally, the modification installed separate and independent fusing for the main control power transformer, 1T1, to prevent a loss of the entire cooling unit due to a loss-of-control power. The team assessed whether the design and licensing bases, and performance capability of the Unit 1 & 2 safety related switchgear HVAC units had been degraded by the modification. In addition, the 10 CFR 50.59 screen associated with this modification was reviewed as described in section 1R17.1 of this report.

The team assessed selected attributes of the modification process to determine whether they were consistent with the design and licensing bases. These attributes included fuse sizing calculations, design evaluation, and electrical wiring schematics. Design assumptions were reviewed to evaluate whether they were technically appropriate and consistent with the UFSAR. The team reviewed selected calculations, drawings, analysis, procedures, and the UFSAR to determine whether they were properly updated with revised design information and operating guidance. The team also discussed the fuse modification and design basis with design engineers and system engineers to evaluate the effectiveness of the modification. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The team reviewed a sample of condition reports associated with 10 CFR 50.59 issues and plant modification issues to determine whether Constellation was appropriately identifying, characterizing, and correcting problems associated with these areas and whether the planned or completed corrective actions were appropriate. The condition reports reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (IP71153)

.1 (Closed) LER 05000318/2008001, Pressurizer Safety Valve Setpoint Low Due to Different Temperature Profiles.

a. Inspection Scope

The team reviewed Licensee Event Report (LER) 2008001, Pressurizer Safety Valve Setpoint Low Due to Different Temperature Profiles, Revision 0, to evaluate the event described in the LER. The team also interviewed engineering personnel to determine the cause of the safety valve lifting and determine what corrective actions were taken by Constellation. Additionally, the team reviewed Constellation's Surveillance Testing procedure, EN-4-104, to determine the site's relief valve testing process. The team also reviewed Information Notice (IN) 89-90, Supplement 1, - Pressurizer Safety Valve Lift Setpoint Shift, which discussed possible problems resulting from operating pressurizer safety valves in environments different from that used to establish the safety valve lift setpoints, including temperature. Finally, the team reviewed Constellation's apparent cause evaluation and associated corrective actions to determine if they were reasonable and adequate as documented in IRE-027-718. This LER is closed.

b. Findings

Introduction. A Green, self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified because Constellation did not identify a degraded pressurizer safety valve (PSV) prior to installation. Specifically, the team found that Constellation did not recognize that the pressurizer safety valve was set and bench tested at a temperature outside

the Unit 2 acceptable temperature profile band and when the temperature profile was changed Constellation failed to identify that the new profile would affect the valve lift setpoint.

Description. The team found that on November 16, 2006, following an automatic reactor trip, PSV (BV02950) simmered (began to lift) below its expected pressure setpoint. Constellation removed the valve and sent it to the vendor laboratory for as-found bench testing. During the as-found test, the valve lifted at 2414 psia. The team noted that this was lower than the Technical Specification limit of 2475 psia. Constellation's inspection of the valve found no degraded material condition that would have caused the valve to lift below its expected setpoint. Subsequently, the testing facility determined that the temperature profile (valve flange inlet temperature when installed) used during the bench test for the as-found lift setting was different than the temperature profile used to set the valve in April 2003. Following an analysis of the difference between the temperature profiles and review of previous operating experience, Constellation concluded that the settings established using the different temperature profile would have caused the valve to lift at a lower pressure. They concluded that this setup error resulted in the reactor coolant system (RCS) pressure needed to lift the valve being below the TS limit. The team agreed with this assessment.

Constellation subsequently identified that in April 2003, PSV BV02950 was set with an out-of-specification temperature profile by the testing facility. The valve was supposed to be set using a temperature profile created in 1998. This profile required the valve be set when the PSV's inlet flange temperature was at 320 °F +/- 20 °F, but the valve was actually set using an inlet flange temperature of 294 °F. Constellation's review of the test results in 2003 did not identify that the test had been incorrectly performed. Additionally, Constellation identified that a new temperature profile for the PSV was established in 2004 which required the PSVs be set with an inlet flange temperature of 390 °F +/- 20 °F. Prior to installing valve BV02950 in 2005, Constellation evaluated the potential effect of the new temperature profile for pressurizer safety valves set using the 1998 temperature profile, and concluded there would be no effect on the setpoint. Following the evaluation, PSV BV02950 was installed in Unit 2 in Spring 2005.

Constellation performed an extent-of-condition review and determined that five of eight PSVs had been installed with their setpoint established at the wrong temperature profile in the last three years. For the five valves that were incorrectly set, Constellation had cycled them out during previous refueling outages. Constellation performed a review to ensure that all PSVs currently installed were set at the correct temperature profile. Constellation also took corrective actions to address deficiencies associated with the testing program.

Analysis. The performance deficiency associated with this finding was that Constellation did not identify a degraded pressurizer safety valve prior to installation in the primary system. The finding was more than minor because it was similar to NRC Inspection Manual, Chapter 0612, Appendix E, "Examples of Minor Issues," example 2.a, in that, Constellation failed to adequately evaluate

the valve setpoints prior to returning the valve to service, and subsequent testing identified that Technical Specification limits were not met. The finding was associated with the equipment performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, opening of the pressurizer safety valve below the TS limit increased the likelihood of a stuck open primary system relief valve event. The finding was evaluated using Inspection Manual Chapter 0609 Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." The team determined that this finding was of very low safety significance because the deficiency was not associated with increased RCS leakage and would not have caused other mitigating systems to fail which could result in a total loss of their safety function.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, Corrective Action requires, in part, that conditions adverse to quality are promptly identified and corrected. Contrary to the above, Constellation did not identify the degraded pressurizer safety valve between April 2003 and November 2006 despite two opportunities to identify the PSV was set at the wrong temperature profile. However, because the finding was of very low safety significance (Green) and has been entered into their corrective action program (IRE-028-189), this violation is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000318/2008009-01, Failure to identify an Inoperable Pressurizer Safety Valve).**

4OA5 Other

- .1 (Closed) Temporary Instruction (TI) 2515/166 - Pressurized Water Reactor Containment Sump Blockage (NRC Generic Letter 2004-02)

a. Inspection Scope:

The team performed the inspection in accordance with Temporary Instruction (TI) 2515/166, Pressurized Water Reactor Containment Sump Blockage (NRC Generic Letter 2004-02), Rev. 1. The TI was developed to support the NRC review of licensee activities in response to NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors (PWR)." Specifically, the inspector verified at both units that the implementation of the modifications and procedure changes was consistent with the actions committed to in Constellation's supplemental response to GL 2004-02, dated April 22, 2008. The supplemental response provided the remaining information regarding the actions and methodologies used at Calvert Cliffs to resolve the issues in the GL including downstream effects analysis. Additionally, the team reviewed the TS and the UFSAR, to verify that required changes to the TS were being submitted to the NRC for approval and that the UFSAR had been or was in the process of being updated to reflect the plant changes.

Portions of this TI were performed during the 2007 refueling outage for Unit 2 and the 2008 refueling outage for Unit 1. The results of those inspections were documented in Inspection Report No. 05000318/2007002 and 05000317/2008002.

b. Evaluation of Inspection Requirements:

The TI requires the inspectors to evaluate and answer the following questions:

1. Did the licensee implement the plant modifications and procedure changes committed to in their GL 2004-02 response?

The inspectors verified that Constellation implemented the plant modifications and procedure changes committed to in their GL 2004-02 responses. The inspections performed in 2007 and 2008 verified the implementation of the sump screen modifications related to the GL. The inspectors verified that the modifications previously installed met the assumptions of Constellation's completed analyses. The inspectors reviewed Constellation's emergency operating procedures and verified that the procedures ensured the assumptions described in the licensee supplemental response to the GL were in alignment with the procedure guidance. Finally, the inspector verified the modifications to address downstream effects had been performed or were scheduled to be performed.

2. Has the licensee updated its licensing basis to reflect the corrective actions taken in response to GL 2004-02?

The inspectors verified that Constellation had either updated, or was in the process of updating, the licensing basis to reflect the actions required to be taken in response to GL 2004-02. Specifically, the inspectors verified that changes to the facility or procedures as described in the UFSAR that were identified in the licensee's GL 2004-02 responses were reviewed and documented in accordance with 10 CFR 50.59. The inspector also verified that Constellation intended to submit changes to the technical specifications for approval by the NRC. Finally the inspector verified that required changes to the UFSAR, describing the changes to the plant, were in the process of being updated.

Based on the inspectors' review of the hardware modifications, and procedure and licensing bases changes, the inspection requirements of the Temporary Instruction are complete and the TI is closed at Calvert Cliffs Units 1 and 2. In a letter dated June 30, 2008, NRR approved Constellation's request to extend the completion date for the remaining analyses and licensing activities required for GL 2004-02. As of this inspection, the remaining activities include: submission of license amendment requests by July 31, 2008, to change the containment buffering agent in both units; implementation of the buffer change out on both units (Unit 2 during the Spring 2009 refueling outage and Unit 1 ninety days after approval of the license amendment); removal of excess aluminum material from

the Unit 2 containment during the Spring 2009 refueling outage; and, completion of the required engineering evaluations, including the chemical precipitant analysis, and submittal of the supplemental response to GL 2004-02 by September 30, 2008.

The TI-2515/166 inspection results, as well as any results of sampling audits of licensee actions will be reviewed by the NRC staff (Office of Nuclear Reactor Regulation-NRR) as input, along with the Generic Letter (GL) 2004-02 responses to support closure of GL 2004-02 and Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on Pressurized-Water Reactor (PWR) Sump Performance." The NRC will notify Constellation by letter of the results of the overall assessment as to whether GSI-191 and GL 2004-02 have been satisfactorily addressed at Calvert Cliffs Units 1 and 2. Completion of TI-2515/166 does not necessarily indicate that Constellation has finished all testing and analyses needed to demonstrate the adequacy of their modifications and procedure changes. As noted above, Constellation has obtained approval of a plant-specific extension that allows for completion of testing, analyses, and modifications. Constellation will confirm completion of all corrective actions to the NRC in a supplemental response letter to GL 2004-02. As part of the process described above to ensure satisfactory resolution of GL 2004-02 and GSI-191, the NRC will track all such yet-to-be-performed items identified in the TI-2515/166 inspection reports to completion and may choose to inspect implementation of some or all of them.

c. Findings:

No findings of significance were identified.

40A6 Meetings, including Exit

The team presented the inspection results to Mr. D. Bauber and other members of Constellation's staff at an exit meeting on June 20, 2008. The team verified that this report does not contain proprietary information.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Simpson	Licensing
D. Bauber	Plant General Manager
M. Flaherty	Manager, Engineering Services
M. Gahan	General Supervisor, Design Engineering
C. Dobry	Fire Protection Engineer
G. Gryczkowski	Nuclear Fuel Analysis Engineer
D. Lanker	Electrical and I&C Design Supervisor
M. Stanley	Fire Marshal
J. Peck	Systems Engineer, Electrical
R. Stark	Principal Design Engineer
L. Williams	Systems Manager
D. Young	Procurement Analyst

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Open and Closed

05000318/2008009-01	NCV	Failure to Identify an Inoperable Pressurizer Relief Valve (Section 40A3)
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Closed

05000318,319/2515/166	TI	Pressurized Water Reactor Containment Sump Blockage (Section 40A5)
05000318/2008001	LER	Pressurizer Safety Valve Setpoint Low Due to Different Temperature Profiles (Section 40A3)

LIST OF DOCUMENTS REVIEWED

1R017

10 CFR 50.59 Evaluations

SE00495, Unit 2 Cycle 16 Core Reload
SE00499, Unit 1 Cycle 19 Core Reload
SE00500, Time to Reconstitution
SE00501, Reduce 6-day Decay Time Prior To Fuel Offload to Facilitate RFO's

10 CFR 50.59 Screened-out Evaluations

- ES199800827-000, Install Two New 13kV Outdoor Switchgear Cubicles and Breakers with Local (Hand Switch) Controls and Indication of Bus #11 and #21, Rev. 3
- ES199800827-008, Install Close Permissive Interlocks for Breakers 252-1106 and 252-2106, Rev. 0
- ES200200663, Design for Temp Alt. 1-02-0054 to be Installed on All Charging Pumps, dated 01/24/08
- ES200300535-000, Removal of Plant Equipment to Support Removal of Interim Office Building, including Fire Protection Sprinkler System and Associated Vlvs, Rev. 0
- ES200300673-000, Evaluate Proposed Changes from Flowserve on Spare MSIV Actuators, dated 5/07/2007
- ES200400184, Replace Obsolete #6 Main Steam Line Trap Level Switch 1-LS-6604, Rev. 0
- ES200400527, Replace Instrument Air Compressor Unloader Solenoid Valves with High Flow Direct Acting Valves, Rev. 0
- ES200400579, Evaluation to Support Installing Permanent Scaffolding for Unit 1 & 2, Rev. 0
- ES200500181-000, Evaluation of Minimum Time to RAS, Rev. 1
- ES200500310, Install an Automatic Purge Isolation Valve in the Instrument Air Dryer Purge Exhaust Line, Rev. 0
- ES200500342, Replace Lovejoy Digital Feedwater Electronic Cabinet Power Supply, Rev. 0
- ES200500510, Switchgear Room HVAC Fuse Modification, Rev. 0
- ES200500680-000, Lower the "HPSI PP DISCH PRESS HI" Alarm, dated 01/11/08
- ES200600026-000, Motor Name Plate Withdrawn From Stock Does Not Match NUCLEIS Description for Material Number 76V17, Rev. 0
- ES200600158-000, Allow HeliCoil Inserts for Body of 1CV4885 (SGFP minimum flow valve), Rev. 0
- ES200600387, Upgrade 26 A & B Traveling Screen, Rev. 3
- ES200600497-000, Evaluate Alternate Hose Material for FME EDGs, Jacket Coolant Header Vents and Air Cooler Header Vents, Rev. 0
- ES200600764, Install a Vent Valve in the Unit 1 SDC Piping in High Point, Rev. 2
- ES200700091-000, Provide an Evaluation of Measures needed to Keep Calcium Silicate Insulation Out of the ZOI of a Unit 2 RCS Pipe Break, dated 4/26/2007

Modification Packages

- ES199800827-008, Install Close Permissive Interlocks for Breakers 252-1106 and 252-2106, Rev. 0
- ES200200663, Design for Temp Alt. 1-02-0054 to be Installed on All Charging Pumps, dated 01/24/08
- ES200300535-000, Removal of Plant Equipment to Support Removal of Interim Office Building, Rev. 1
- ES200400579, Evaluation to Support Installing Permanent Scaffolding for Unit 1 & 2, Rev. 0
- ES200500310, Install an Automatic Purge Isolation Valve in the Instrument Air Dryer Purge Exhaust Line, Rev. 0
- ES200500510, Switchgear Room HVAC Fuse Modification, Rev. 0
- ES200600387, Upgrade 26 A & B Traveling Screen, Rev. 3
- ES200600764, Install a Vent Valve in the Unit 1 SDC Piping in High Point, Rev. 2

Calculations & Analysis

CA00978, 480V Load Center 12A Electrical Calculations
 CA04903, Evaluation of Minimum Time to RAS, Rev. 2
 CA05689, Design Basis for the Minimum Performance Acceptance Criteria for the HPSI, LPSI, and CS Pump Large Flow STPs, Rev. 1
 CA06766, Fuel Handling Accident During Reconstitution, Rev. 1
 CA06817, Unit 1 Cycle 19 Plant Parameter Ground rules, Rev. 1

Conditions Reports (* denotes NRC identified during this inspection)

IRE-007-185	IRE-018-411	IRE-028-964
IRE-007-394	IRE-021-196	IRE-031-253
IRE-014-029	IRE-027-718	IRE-032-198*
IRE-017-571	IRE-028-189	IRE-032-454*

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12409-0002SH0006-2001SH0001, Wiring Diagram 13kV Switchgear Breakers 252-1106 & 252-2106, Rev. 0
 12409-0002SH0006-2001SH0002, Wiring Diagram 13kV Switchgear Breakers 252-1106 & 252-2106, Rev. 0
 12409-0002SH0006-2001SH0003, Wiring Diagram 13kV Switchgear Breakers 252-1106 & 252-2106, Rev. 0
 2064C-13SX, Velan Cast Stainless Steel Gate Valve
 60714SH0001-2003SH0001, Plant Fire Protection System Fire Pump House and Main Header, Rev. B
 60714SH0006-2002SH0001, Removal of the Intermediate Office Building, Rev. B
 61001SH0001, Electrical Main Single Line Diagram, Rev. 42
 61070SH0006, Schematic Dia. 13.8/4.16KV Ser. Trans. Tie Bkr. 252-1105, Rev. 11
 61070SH0007, Schematic Dia. 13KV Service Bus 11 FDR BKR Unit 1 BKR 252-1104, Rev. 20
 61070SH0011, Schematic Dia. 13KV Service Bus 23 FDR BKR 252-23-2301 Offsite Power Source from SMECO, Rev. 9
 61070SH0013, Schematic Dia. Site Power Sys. Feeder Breaker 252-1106, Rev. 1
 61085SH0009J, Schematic Dia. Switchgear Room HVAC Unit 11 Control, Rev. 6
 63070SH0006, Schematic Dia. 13KV Service Bus 21 Tie BKR 252-2105, Rev. 7
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 DCN 15869-0009SH0001-2001SH0001, Rewire Control XFMR 1T1 to Line Side of Fuses 1F2 & 1F3, Rev. 0
 FSK-MP-0160, High Point Vents, Nuclear for 2 ½" & Large Process Pipe, Rev. 3

Surveillance and Modifications Acceptance Tests

ETP 06-014, 13kV Vacuum Breaker Interlock Functional Test for 252-2106 Unit 2 Site Self Power Breaker, Rev. 0
 ETP 07-004, 13kV Vacuum Breaker Interlock Functional Test for 252-1106 Unit 1 Site Self Power Breaker, Rev. 0
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STP-O07M-1, Containment Spray Flow Test, Rev. 4
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1C24B-ALM, Fire Systems Alarm Manual, Rev. 41
2C13-ALM, SRW and Misc Station Services Alarm Manual, Rev. 53
AOP-7L, Circulating Water/ Intake Malfunctions, Rev.13
CNG-CM-1.01-1003, Design Engineering and Configuration Control, Rev. 1
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EN-1-100, Engineering Services Process Overview, Rev. 19
EN-1-102, 10 CFR 50.59/10 CFR 72.48 Reviews, Rev. 12
EN-1-102, 10 CFR 50.59/10 CFR 72.48 Reviews, Rev. 11
EN-4-104, Surveillance Testing, Rev. 4
EOP-5, Loss of Coolant Accident, Rev. 23
FH-305, Fuel Handling Procedure, Rev. 12
FH-340, Fuel Handling Procedure Component Movement in the Aux. Building, Rev. 18
MN-PMTG, Post Maintenance Test Guidance, Rev. 0
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OI-27B, 13.8 KV System, Rev. 17
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Rep-21, Reactor Engineering Surveillance Procedure, Rev. 10

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A-HOOV-MC001-E1, Eaton Aeroquip Fluid Conveyance Products, 12/07
12759-072, Vendor Technical Manual for Fire Panel 1PNL1fp86

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Emergency Core Cooling System Performance Analysis, dated 4/06/05
52-10845, MCC Setting Sheet, HVAC System for #23, 250 v Battery Room, Rev. 1
AIT IR200500211, Apparent Cause Evaluation on HVAC System and Fuse
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Calvert Cliffs Technical Requirements Manual, Rev. 13
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DES-08-01-C, Engineering and Design Program, 05/22/08
IN 96-39, Estimates of Decay Heat Using ANS 5.1 Decay Heat Standard May Vary
Significantly

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Amendment Re: Removal of Charging Pumps from the Emergency Core Cooling
System Technical Specifications
Letter dated 2/29/2008, Evaluation of the Source Term Impact of LFA Burn-up Less than
or Equal to 70 GWD/MTU
M-18, Office and Field Engineering Users Manual for Routing and Supporting Two Inch
and Under Piping, Rev. 0
N-187, Low Pressure Safety Injection Pump Performance, dated 3/04/70
NEI 98-03, Guidelines for Updating Final Safety Analysis Reports, Rev. 1
NRC Regulatory Guide 1.187, Guidance for Implementation of 10 CFR 50.59, Changes,
Tests, and Experiments, dated November 2000
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4A05

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Basis Accidents At Pressurized Water Reactors” – Calvert Cliffs Nuclear Power
Plant, Units Nos. 1 and 2, dated June 30, 2008
Constellation Letter: Request for Extension for Completion of Activities Related to
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Constellation Letter: Request for Extension for Completion of Activities Related to
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Constellation Letter: Revision to Generic Letter 2004-02 Response, dated May 2, 2007
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Pressurized-Water Reactors, dated September 20, 2007
Constellation Letter: Calvert Cliffs Nuclear Power Plant Unit 1 & 2; Docket No. 50-317 &
50-318 Revision to Generic Letter 2004-02 Response, dated April 22, 2008
EOP-5, Loss of Coolant Accident, Rev. 19
Updated Final Safety Report Section 6.3: Safety Injection System, Rev. 35

LIST OF ACRONYMS

CFR	Code of Federal Regulations
GL	Generic Letter
GSI	Generic Safety Issue
HVAC	Heating, Ventilation and Air-conditioning
IMC	Inspection Manual Chapter
IOB	Interim Office Building
IR	Inspection Report
LER	Licensee Event Report
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PLC	Programmable Logic Controllers
PSV	Pressurizer Safety Valve
PWR	Pressurized Water Reactor
RCS	Reactor Coolant System
SDP	Significance Determination Process
SMECO	Southern Maryland Electric Cooperative
SSC	Structures, Systems and Components
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report