July 12, 2004

Mr. George Vanderheyden
Vice President - Calvert Cliffs Nuclear Power Plant
Constellation Generation Group, LLC
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT- NRC FIRE PROTECTION INSPECTION REPORT NO. 05000317/2004003 AND 05000318/2004003

Dear Mr. Vanderheyden:

On May 28, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Calvert Cliffs Nuclear Power Plant. The enclosed triennial fire protection team inspection report documents the inspection findings, which were discussed on May 28, 2004, with Mr. B. Montgomery 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 purpose of the inspection was to evaluate your post-fire safe shutdown capability and fire protection program. Within these areas, the inspectors reviewed selected procedures and records, observed activities and interviewed personnel.

The report documents three NRC-identified findings of very low safety significance (Green). Two of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these two findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-001; 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 Nuclear Power Plant.

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

Sincerely,

/RA/

John F. Rogge, Chief
Electrical Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 05000317/2004003 and 05000318/2004003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-317, 50-318
License Nos:	DPR-53, DPR-69
Report No:	05000317/2004003 and 05000318/2004003
Licensee:	Constellation Generation Group, LLC
Facility:	Calvert Cliffs Nuclear Power Plant
Location:	1650 Calvert Cliffs Parkway Lusby, Maryland 20657
Dates:	May 10-14 and 24-28, 2004
Inspectors:	R. Fuhrmeister, Sr. Reactor Inspector, Division of Reactor Safety (DRS) L. Scholl, Sr. Reactor Inspector, DRS C. Cahill, Sr. Reactor Inspector, DRS L. Cheung, Sr. Reactor Inspector, DRS A. Rosebrook, Reactor Inspector, DRS J. Bream, Reactor Safety Intern, DRS
Approved By:	J. Rogge, Chief Electrical Branch Division of Reactor Safety

Enclosure

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SUMMARY OF FINDINGS

IR 05000317/2004003, 05000318/2004003; 05/10-14 and 24-28/2004; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Fire Protection

This report covers a two week baseline inspection of post-fire safe shutdown capability by regional specialists. Two Green non-cited violations (NCVs) and one Green finding were identified. 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 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The team identified a non-cited violation of License Condition 3.E, because Calvert Cliffs Nuclear Power Plant was not maintaining control of combustible materials in the Unit 1 69' West Electrical Room as described and approved in the safety evaluation report issued September 14, 1979.

  Since the finding affected the initiating events cornerstone objective the finding is more than minor. The finding is of very low safety significance because the material was not located below cable trays carrying safety related cables, and the material had been evaluated in the combustible loading calculations. (Section 1RO5.4)

Cornerstone: Mitigating Systems

- Green. The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2, because Calvert Cliffs Nuclear Power Plant utilized manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection to the cables associated with that equipment, as required by the regulation.

  In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection," (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2 of inspection procedure 71111.05. (Section 1R05.5).

- Green. The team identified a finding in that protective relay settings for the bus-tie circuit breakers for the 1A and OC emergency diesel generators were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480VAC load centers.

Because the finding affected the design control attribute of the mitigating systems cornerstone, it was more than minor. Since the issue did not result in an actual loss of a safety function of a single train of equipment, the issue was determined to be of very low safety significance.

B. Licensee-Identified Violations

None

Report Details

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, “Fire Protection.” The objective of the inspection was to assess whether Constellation Generation Group, LLC (Constellation) has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Calvert Cliffs Nuclear Power Plant (CCNPP). The following fire areas were selected for detailed review based on risk insights from the Calvert Cliffs Nuclear Power Plant Individual Plant Examination of External Events (IPEEE):

Unit 1 69' West Electrical Room
Unit 1 East Electrical Penetration Room
Unit 2 27' Switchgear Room
Unit 2 Auxiliary Feedwater Pump Room

This inspection was a reduced scope inspection in accordance with the September 22, 2000, revision to IP 71111.05, “Fire Protection.” Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in Generic Letter 81-12 and the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

1. REACTOR SAFETY
   Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection

1. Passive Fire Barriers

a. Inspection Scope

During tours of the facility, the team evaluated the material condition of fire walls, fire doors, and fire barrier penetration seals to ensure that the CCNPP facility was maintaining the passive features in a state of readiness.

The team randomly selected two fire barrier penetration seals for detailed inspection to verify proper installation and qualification. The team reviewed associated design drawings, test reports, and engineering analyses. The team compared the observed in-situ seal configurations to the design drawings and tested configurations. Additionally, the team compared the penetration seal ratings with the ratings of the barriers in which they were installed. This was accomplished to verify that Constellation had installed the selected penetration seals in accordance with their design and licensing bases.

b. Findings

No findings of significance were identified.

2. Manual Fire Suppression Capability

a. Inspection Scope

During tours of the facility the team observed the standpipe systems, hose reels, fire pumps and portable fire extinguishers to determine the material condition of the manual firefighting systems. Fire pump flow and pressure tests were reviewed by the team to ensure the pumps were meeting the design requirements. The team reviewed the pre-fire plans for the target areas to verify accuracy of the plans with regard to the installed fire protection features in the areas.

The team inspected the fire brigade's protective ensembles, self-contained breathing apparatus, portable communications equipment and other fire brigade equipment to determine material condition and readiness of the equipment for fire fighting. The inventory was compared to 10 CFR 50, Appendix R, Section H requirements.

b. Findings

No findings of significance were identified.

3. Post-Fire Safe Shutdown Emergency Lighting

a. Inspection Scope

The team observed the placement and aiming of 8 hour emergency lighting units (ELUs) throughout the plant to evaluate their adequacy for illuminating access and egress pathways for post-fire shutdown as required by Section III.J of Appendix R to Title 10 of the Code of Federal Regulations, Part 50 (10 CFR 50). In addition, during the walk-through of manual actions documented in Section 1RO5.5 of this report, the team verified ELUs were provided where needed.

b. Findings

No findings of significance were identified.

4. Programmatic Controls

a. Inspection Scope

During tours of the CCNPP facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. This was accomplished to

verify that the CCNPP facility was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with their fire protection program.

b. Findings

Introduction. A Green non-cited violation (NCV) was identified in that CCNPP was not maintaining control of combustibles as described and approved in the safety evaluation report (SER) issued September 14, 1979.

Description. During tours of the target areas, the inspectors noted large quantities of health physics materials and equipment for outage use stored inside a chain-link fence enclosure in the north end of the Unit 1 69' West Electrical Room. The inspectors determined that the fenced enclosure was not an approved storage location in accordance with site procedures. In addition, the team determined that CCNPP had committed to remove all combustible material not needed for routine operation and maintenance of the plant from the room. Storage of combustible materials needed for routine operation and maintenance was to be limited to approximately one weeks supply. This commitment was approved in Section 5.26.6 of the SER dated September 14, 1979.

Analysis. The finding adversely impacted combustible material control and could cause an increase in the fire initiating event frequency. Because the finding affected the reactor safety initiating events cornerstone objective, the finding is greater than minor. If the condition were left uncorrected, it would become more significant since a large fire could develop a hot gas layer which would damage post-fire safe shutdown equipment control and power cables. Because the material was not located directly under cables associated with post fire safe shutdown equipment and was not sufficient to generate a hot gas layer, the issue screened to very low risk significance (Green) in Task 2.3.4 of the draft revision to Appendix F to IMC 0609, "Significance Determination Process."

Enforcement. CCNPP License Condition 3.E (for both units) requires CCNPP to implement and maintain the administrative controls identified in Section 6 of the NRC's Fire Protection Safety Evaluation on the facility dated September 14, 1979. Section 6.0, "Administrative Controls" of the September 14, 1979 SER states that the administrative controls for fire protection consist of the fire protection organization, the qualification and training for fire protection personnel, the controls to be exercised over combustibles and ignition sources, plans and procedures for fighting fires in the various plant areas, and the quality assurance provisions for fire protection. Section 5.26.6 of the September 14, 1979 SER documents and approves CCNPPs commitment to limit combustible materials stored in the Unit 1 69' Electrical Room to those necessary to support normal plant operation and maintenance for a period of one week. Contrary to the above, quantities of combustible material in excess of the amount needed for one week's routine operation of the facility were stored in the Unit 1 69' West Electrical Room, in an area not approved for storage. Because the failure to control combustible materials is of very low safety significance and has been entered into the corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC

Enforcement Policy. **(NCV 05000317/2004003-01, 05000318/2004003-01, Combustible Material Control in Unit 1 69' West Electrical Room.)**

5. Operational Implementation of Post-Fire Safe Shutdown

a. Inspection Scope

The team reviewed applicable system flow diagrams, instrument loop diagrams, operating procedures and modifications to verify that appropriate safe shutdown components had been identified. The team reviewed electrical one line diagrams, control panel layouts, control circuit schematic diagrams, cable tray designations, fire zone/area arrangements drawings, panel and rack wiring diagrams, circuit breaker coordination curves, calculations, vendor information and the electrical cable and raceway information system to verify that the conclusions of selected sections of the safe shutdown analysis were correct. The team also verified that the procedures, equipment, fire barriers, and systems provided were sufficient to assure that one train of equipment remained to provide post-fire safe shut down capability for the plant.

For the selected areas, the team also reviewed the CCNPP Interactive Cable Analysis (ICA), Revisions 0, 3 and 4, to ensure that at least one post-fire safe shutdown success path, free of fire damage, was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions. The team sampled sections of operating procedures and walked down required manual actions taking into consideration such factors as timing, accessability of the equipment, and availability of procedures. The team used the guidance of Inspection Procedure (IP) 71111.05, Enclosure 2, to confirm the availability of selected components and feasibility of the manual actions.

Due to the issuance of Change Notice 00-020 against IP 71111.05, "Fire Protection," the team did not review associated circuit issues during this inspection. This change notice has suspended this review pending completion of an industry initiative in this area.

b. Findings

Introduction. The team identified a Green NCV of Title 10 CFR 50, Appendix R, Section III.G, in that CCNPP used manual actions to operate equipment necessary for achieving and maintaining hot shutdown. These manual actions were implemented in lieu of providing protection for the cables associated with that equipment, as required by 10 CFR 50, Appendix R, Section III.G.2.

Description.

During this inspection, the team reviewed Revision 4 of the ICA, Attachment 7, for fires in room 529 (Unit 1 West 69' Electrical Room) and identified that multiple manual

actions had been credited for the post-fire safe shutdown. Specifically, local manual actions at motor operated valves (MOV) were required to ensure that a suction path for the charging pumps remained available to support charging pump operation for maintaining reactor coolant inventory. These actions mainly required tripping a circuit breaker and manual MOV operations. These manual actions did not meet the requirements of Appendix R, section III.G.2 and the NRC had not granted exemptions to allow these actions.

Analysis. IP 71111.05 (revision date March 6, 2003) states that, "If the inspectors determine that manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2, then the inspection report will identify this issue as a green finding pending the Commission's acceptance of the proposed staff initiative to incorporate the use of manual actions into section III.G.2 of the regulation. (The green finding is an indicator that while compensatory measures in the form of manual actions have been implemented and are acceptable, the licensee continues to be in violation of the regulatory requirements). If the inspectors determine that the manual actions are not reasonably accomplishable and, therefore, implementation may not lead to a safe plant condition, the preliminary finding will be identified as potentially greater than green and entered into the SDP."

Specifically, the team determined that, (1) adequate diagnostic instrumentation was provided to detect spurious actuation of equipment and verify accomplishment of manual actions; (2) the environmental conditions potentially encountered by the operator(s) while accessing and performing the manual actions were reasonable; (3) staffing was sufficient and training adequate; (4) procedures were available for performing the planned manual action; (5) communication means had been provided; (6) when necessary, special tools had been dedicated and made available for use; (7) the equipment requiring manipulation was accessible; and (8) the required manual actions could be accomplished within the specified time. The use of manual actions in lieu of protecting equipment and cables necessary for safe shutdown, not specifically reviewed and approved as exemptions to Appendix R, Section III.G.2 was a performance deficiency. The team characterized this issue as a more than minor, very low risk significance (Green) finding in accordance with IP71111.05, Enclosure 2 guidance.

Enforcement. 10 CFR 50.48 "Fire Protection," and 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," establish specific fire protection features required to satisfy 10 CFR Part 50, Appendix A, General Design Criterion 3, "Fire Protection." Appendix R applies to licensed nuclear power stations that were operating prior to January 1, 1979, which includes CCNPP. Section III.G.2 of Appendix R to 10 CFR Part 50 requires that, "where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:

a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;

b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

Contrary to the above, the team found that, at CCNPP, the licensee had included additional manual actions, in lieu of protection as required by the regulation, to operate equipment necessary for achieving and maintaining hot shutdown. These manual actions did not meet the requirements of Appendix R, section III.G.2 and the NRC had not granted exemptions to allow these actions. This issue was determined to be of very low safety significance because CCNPP's application of manual actions met the criteria established in IP 71111.05, Enclosure 2, and was entered into the corrective action program (IR4-022-760). This violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000317/2004003-02, 05000318/2004003-02, Failure to Provide Protection in Accordance with 10 CFR Part 50, Appendix R, Section III.G.2.)**

6. Safe Shutdown Circuit Analyses

a. Inspection Scope

The team reviewed the ICA, Rev. 4, for the four selected fire areas to assure that circuits required for safe shutdown were identified and protected. The team also reviewed the electrical one line diagrams, control panel diagrams, control circuit schematic diagrams, cable tray designations, remote shutdown panel and isolation circuit drawings, fire zone/area arrangements drawings, panel and rack diagrams, design and operating procedures, circuit breaker coordination curves, coordination calculations, and modifications, to verify the conclusions of selected sections of the safe shutdown analysis and to ensure that the post-fire capability exists to safely shut down the plant.

The team also walked down portions of cable routing to confirm that the cables required for safe shutdown would not be impacted by the postulated fires.

Due to the issuance of Change Notice 00-020 against Inspection Procedure 71111.05, "Fire Protection," the team did not review associated circuit issues during this inspection.

This change notice has suspended this review pending completion of an industry initiative in this area.

b. Findings

Introduction. A finding was identified in that protective relay settings for the bus-tie circuit breakers for the 1A and OC emergency diesel generators (EDGs) were not adequately coordinated with the feeder breakers for the 4kV/480V service transformers supplying the 480V load centers.

Description. The team identified a lack of coordination of the breakers supplying the 4kV/480V service transformers and the bus cross-tie breakers (which also served as feeder breakers to 4 kV safety buses 11, 14 and 24 during a loss of offsite power (LOOP) or a station black out (SBO) condition) for both diesel generators 1A and OC (A total of eight sets of breaker combinations). A loss of offsite power condition, combined with an arcing fault at 480 V breakers downstream of the 4kV/480V service transformers could cause the bus-tie breakers to trip before the service transformer supply breakers, resulting in a total loss of a safety bus, which was designed to carry major mitigating system loads.

While reviewing Calculation D-E-94-001, Rev. 7, Relay Setting and Coordination, the team noted that the coordination curves between breaker 152-1102 and breaker 152-1103 were very close at the .7 second tripping area (sheet 18, Appendix A). The coordination curves did not include relay test allowances (discussed below) and relay setpoint uncertainties. Breaker 152-1103 is a bus-tie breaker and also serves as the feeder breaker when safety 4 kV safety bus 11 is powered by emergency diesel generator 1A, while breaker 152-1102 was for the protection of 4kV/480V service transformer 11B. A mis-coordination of these two breakers and an arcing fault at 480 V breaker 52-1113 could cause bus-tie breaker 152-1103 to trip before service transformer supply breaker 152-1102, resulting a total loss of safety bus 11, which was designed to carry major mitigating system loads.

The team also noted that Calculation D-E-94-001 did not have coordination curves for breakers 152-2402/152-2413 and 152-2406, breakers 152-1402/152-1413 and 152-1406, breakers 152-1114/152-1102 and 152-1106. Three of these breakers (-XX06) were bus-tie breakers and also served as feeder breakers from diesel generator OC to 4 kV safety buses 11, 14 and 24, while the other breakers were for the protection of 4kV/480V service transformers. Constellation missed these important coordination curves during the original coordination study before diesel generator OC was placed in service in the 1990s. In response to the team's questions, Constellation completed a typical set of coordination curves (for breakers 152-1402 and 152-1406) on May 25, 2004, and generated Issue Report IR4-007-179. These new curves showed that the two curves intersected at the .7 second tripping area. Again, these curves did not include relay test allowances and relay setpoint uncertainties. Similar consequence as that discussed above for diesel generator 1A could occur when the breakers were mis-coordinated combined with a postulated arcing fault (a low probability event).

Constellation stated that test allowance for the breaker relays was +/- 7% and the setpoint uncertainties were unknown, and that the relays were tested every two years. The team reviewed the latest two test results of four breakers (152-1402, 152-1406, 152-2402 and 152-2406) and found that four of the acceptance test results (breaker 152-2406 dated May 28, 2002 and same breaker dated November 5, 1999; breaker 152-1402 dated February 21, 2002 and same breaker dated April 7, 2000) had as-left tripping times exceeded the +/- 7% allowance, with one (for breaker 152-2406) exceeding 17%. The team also found that there were no acceptance criteria for these "acceptance tests" on the relay setting data sheet or in the test procedure (FTE-59 - Periodic Maintenance, Calibration and Functional Testing of Protective Relays). The referenced Technical Manual did not provide a clear guidance to the test technician what as-left value should be maintained. Constellation generated Issue Report IR4-007-181 to document these deficiencies.

In addition, the NRC had issued Generic Letter 88-15 and Information Notices 91-29 and 88-45 to alert licensees of potential design deficiencies associated with inadequate breaker coordination.

Analysis. The team determined that the lack of breaker coordination was a performance deficiency and more than minor because it affected the design control attribute of the Mitigating Systems cornerstone objective to ensure the availability and reliability of the 4 kV safety buses of the onsite electrical systems to prevent undesirable conditions. The issue was determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for greater than its technical specification allowed outage time.

Enforcement. There were no regulatory requirements for breaker coordination, therefore this issue is not a violation of NRC requirements. However, this is an issue of concern that is related to licensee performance deficiencies (inadequate breaker coordination, not completing breaker coordination calculations in a timely manner, and lack of acceptance criteria for acceptance testing (although a violation of 10 CFR 50, Criterion XI, by itself is a minor issue). **(FIN 05000317/2004003-03, 05000318/2004003-03 Inadequate Breaker Coordination.)**

7. Fire Detection Systems

a. Inspection Scope

The team performed a walkdown of the selected fire areas to verify the existence and adequacy of fire detection in the selected fire areas. In addition, the team reviewed completed surveillance procedures to verify the adequacy and frequency of fire detection component testing. This review was performed to ensure that the fire detection systems for the selected fire areas met their design and licensing bases.

b. Findings

No findings of significance were identified.

8. Fixed Fire Suppression Systems and Equipment

a. Inspection Scope

The team evaluated the adequacy of the automatic Halon fire suppression system in the Unit 2 27' Switchgear Room by performing system walkdowns, review of system design, and reviews of initial discharge testing. This review was performed to verify that the fixed suppression system met its design and licensing bases.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA4 Other

1. Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the fire impairments log, open corrective maintenance work orders for fire protection and safe shutdown equipment, selected corrective action reports for fire protection and safe shutdown issues to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. The team also reviewed recent Quality Assurance Audits, and Engineering Self-Assessments of the fire protection program to determine if the licensee was identifying program deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA5 Management Meetings

1. Exit Meeting Summary

The inspectors presented their preliminary inspection results to Mssrs. B. Montgomery, K. Neitman, and other members of the Constellation staff at an exit meeting on May 28, 2004.

Some of the documents reviewed during the inspection were marked as proprietary. All copies of proprietary material used by the inspection team were destroyed at the end of the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Constellation Generation Group, LLC

K. Neitman, Plant Manager
B. Montgomery, Director of Engineering
K. Mills, Manager of Operations
P. Pieringer, Manager of Quality Assurance
P. Furio, Manager of Regulatory Matters
J. Robinson, Fire protection Engineer
G. Cooper, Design Engineer
C. Faller, Design Engineer
E. Mc Cann, Appendix R Engineer
A. Simpson, Licensing Engineer

Nuclear Regulatory Commission

M. Giles, Senior Resident Inspector
P. Qualls, NRR, Fire Protection Engineer
M. Salley, NRR, Fire Protection Engineer
R. Nease, RIV, Sr. Reactor Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000317/2004003-01 and 05000318/2004003-01	NCV	Inadequate Combustible Material Control in Unit 1 69' West Electrical Room
05000317/2004003-02 and 05000318/2004003-02	NCV	Failure to Provide Protection in Accordance with 10 CFR Part 50, Appendix R, Section III.G.2.
05000317/2004003-03 and 05000318-2004003-03	FIN	Inadequate Breaker Coordination

LIST OF ACRONYMS USED

CCNPP	Calvert Cliffs Nuclear Power Plant
CFR	Code of Federal Regulations
Constellation	Constellation Generation Group, LLC
EDG	Emergency Diesel Generator
ELU	Emergency Lighting Unit
GL	Generic Letter
ICA	Interactive Cable Analysis
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IPEEE	Individual Plant Examination for External Events
kV	kilo - Volts
LOOP	Loss of Offsite Power
MOV	Motor Operated Valve
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
SBO	Station Black Out
SDP	Significance Determination Process
SER	Safety Evaluation Report
TS	Technical Specification

LIST OF DOCUMENTS REVIEWED

Piping and Instrumentation Drawings

60706SH0002, Rev. 73, Auxiliary Building and Containment Service Water Cooling System
62706SH0002, Rev. 64, Service Water Cooling System, Auxiliary Building and Containment

Control Circuit Schematics

60-616-B, Rev. 7, Charging Pump Motor Control Logic Diagram, Sheet 23
61-060-E, Rev. 3, Auxiliary Feedwater Actuation System (AFAS) Unit 1 Logic Diagram,
63-077-A-SH307C, Rev. 3, Block Diagram AC Schematic Diagram, 4 kV Bus 24

Calculations and Engineering Evaluations

CA03836, Rev. 0, Appendix R Evaluation of Unit 1 and Unit 2, SRW Cross-Connect for AOP-9
E-90-65, Rev. 4, 4 kV Bus 11 Protective Devices
D-E-94-001, Rev. 7, Relay Setting and Coordination
No. 553, Appendix R Component Evaluation, AFW Pump Motor, February 23, 1999.
No. 201, Appendix R Component Evaluation, FW Steam Generator Wide Range Level Transmitter, January 5, 1999.
BGE Calc. No. CA02243, Rev 0, “Combustible Loading Analysis Database”
ES-031, Rev. 5, Interactive Cable Analysis Appendix R Evaluation
ES200100732, Rev. 1, Evaluate Appendix R Pressurizer Level Restoration Time

Memorandum DE941696.204, Failure of Plastic Fire Hose Nozzles

Drawings

61001SH0001, Rev. 42, Electrical Main Single Line Diagram
61262, Rev. 45, Tray and Conduit, Auxiliary Building, El -10'
61275SH0001 , Rev. 69, Tray and Conduit, Auxiliary Building, El 45'
61269, Rev. 73, Tray and Conduit, Auxiliary Building, El 27'
61264SH0001, Rev. 69, Tray and Conduit, Auxiliary Building, El 3'
61263, Rev. 61, Tray and Conduit, Auxiliary Building, El 5'
61261, Rev. 47, Tray and Conduit, Auxiliary Building, El -15'
60733SH0003, Rev. 51, "Miscellaneous Drain & Sump Piping Turbine & Diesel Bldg. And Yard"
61402SH0030, Rev. 11, "Emergency Lighting & Communication Elevation 27'0" Unit 1 Auxiliary Building"
61402SH0030, Rev. 12, "Emergency Lighting & Communication Elevation 27'0" Unit 1 Auxiliary Building"
61402SH0030, Rev. 13, "Emergency Lighting & Communication Elevation 27'0" Unit 1 Auxiliary Building"

Safe Shutdown Analyses
Interactive Cable Analysis for Calvert Cliffs Nuclear Power Plant, Unit 1 and 2, Rev 4
Interactive Cable Analysis for Calvert Cliffs Nuclear Power Plant, Unit 1 and 2, Rev 3
Interactive Cable Analysis for Calvert Cliffs Nuclear Power Plant, Unit 1 and 2, Rev 0

Procedures

FTE-59, Periodic Maintenance, Calibration and Functional Testing of Protective Relays, Revision 5.
AOP-9J, Rev. 9, Safe Shutdown Due to a Severe Fire in Room 311 Unit 2 Switchgear Room 27'
MN-1-106, Rev. 6, "Control of Equipment and Material in Safety Related Category I (SR-CATI) Structures and Trip Sensitive Areas (TSA)
STP-F-696, Rev. 04/02, Fire Pump Test, performed October 3, 2002
STP-F-696-0, Rev. 5, Fire Pump Test, performed October 15, 2003
STP-F-691-0, Rev.1, Fire Suppression System Flow Test, performed September 17, 1998
STP-F-691-0, Rev. 1, Fire Suppression System Flow Test, performed September 15, 2000
STP-F-691-0, Rev. 2, Fire Suppression System Flow Test, performed September 30, 2002
SA-1, Rev. 5, Fire Protection
SA-1-100, Rev. 10, Fire Prevention
SA-1-101, Rev. 3, Fire Fighting
STP-F-592-1, Rev. 6, Penetration Fire Barrier inspection
MN-1-106, Rev. 6, Control of Equipment and Material in Safety Related Category I (SR-CATI) Structures and Trip Sensitive Areas (TSA)

Corrective Action Program Documents

IR4-007-179	IR4-007-181	IR2-001-715	IR5-004-117
IR4-031-427	IR4-019-669	IR4-029-292	IR4-022-742

IR4-024-826 IR3-076-835

Work/Maintenance Orders

MO 1200102879 MO2200103153 MCR-013-003-00

Training Documents
Operator Training Job Performance Measures:
AOP-9A-7, Rev. 0, "Evaluates an Operator's Ability to Trip MCC Feeder Breakers"
AOP-9A-14, Rev. 0, "Evaluates an Operator's Ability to Electrically Disconnect Plant Equipment to Prevent Inadvertent Operations During a Control Room Evacuation"
AOP-9A-21, Rev. 0, "Evaluates an Operator's Ability to Take Local Control of the 1A DG"
AOP-9I-1P, Rev. 0, "Evaluate TBOs Ability to Isolate Main Steam to the Turbine Building"
OI-34-3, Rev. 2, "Evaluates an Operator's Ability to Return a Logic Cabinet to Service During Mode 3"

Miscellaneous Documents

Vendor Document, Milcor Insulated Fire Rated Doors for Walls and Ceilings
ES-001, Rev. 2, Attachment 1, "Internal Plant Flooding Design Evaluations"
SA-09, "Resolution Document for PDR 96-029, Appendix R Self-Assessment PDR"
Halon System Discharge Test, September 30, 1981
Fire Stop Penetration Tests on Fire Protection System, Slab No. 2, Project No. 03-5980-003