November 8, 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 INTEGRATED INSPECTION REPORT 05000317/2004006 AND 05000318/2004006

Dear Mr. Vanderheyden:

On September 30, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Calvert Cliffs Nuclear Power Plant Units 1 & 2. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 1, 2004, with Mr. Kevin Neitmann and other members of your staff.

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

This report documents one NRC-identified finding of very low safety significance (Green) which was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating this finding as non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the non-cited violation 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 Inspector at the Calvert Cliffs Facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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.html (the Public Electronic Reading Room).

Sincerely,

/RA/

James M. Trapp, Chief
Projects Branch 1
Division of Reactor Projects

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

Enclosure: Inspection Report 05000317/2004006 and 05000318/2004006
w/Attachment: Supplemental Information

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REGION I

Docket Nos.	50-317, 50-318
License Nos.	DPR-53, DPR-69
Report Nos.	05000317/2004006 and 05000318/2004006
Licensee:	Constellation Generation Group, LLC
Facility:	Calvert Cliffs Nuclear Power Plant
Location:	1650 Calvert Cliffs Parkway Lusby, MD 20657-4702
Dates:	July 1, 2004 - September 30, 2004
Inspectors:	Mark A. Giles, Senior Resident Inspector Joseph M. O'Hara II, Acting Senior Resident Inspector Jamie Benjamin, Acting Resident Inspector David Silk, Senior Emergency Preparedness Inspector Neil S. Perry, Senior Project Engineer Shani Lewis, Reactor Inspector
Approved by:	James M. Trapp, Chief Projects Branch 1 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000317/2004006, 05000318/2004006; 7/1/2004-9/30/2004; Calvert Cliffs Nuclear Plant, Units 1 and 2; Operability Evaluations.

The report covered a three-month period of inspection by resident inspectors and announced inspections performed by a senior project engineer, and one reactor inspector. The inspection identified one Green finding, which was determined 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 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1.a. "..., written procedures shall be established, implemented,.." because plant procedural requirements were not implemented during the construction of scaffolding erected in the vicinity of safety-related equipment. Specifically, on January 14, 2004, and again on September 14, 2004, the inspectors identified that scaffolding was constructed in close proximity to safety-related equipment without the required bracing. An engineering evaluation performed by the licensee, associated with the January 14, 2004 occurrence, determined that the scaffolding could aversely affect the safety-related 14A, 480 Vac electrical load center cooling function following a seismic event.

  This finding is greater than minor because it was associated with the mitigating system cornerstone human performance attribute and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Additionally, this finding is consistent with a greater than minor finding as described in NRC Manual Chapter 0612, Power Reactor Inspection Report, Appendix E, Example 4.a. This finding did not involve the actual loss or degradation of equipment specifically designed to mitigate a seismic event or the loss of any safety function. As a result, this finding was determined to be of very low safety significance (Green) in accordance with a phase 1 risk assessment performed in the reactor safety significance determination process. The inspectors identified that a contributing cause of this finding was related to the cross-cutting areas of Human Performance since plant procedures were not followed properly. (Section 1R15)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent reactor power and remained unchanged until September 4th, when reactor power was reduced to 87 percent in support of main turbine control valve and stop valve testing. Following the completion of testing, the unit was restored to 100 percent on September 5th. On September 10th, reactor power was reduced to 97 percent to support cleaning of a waterbox. Following the completion of this maintenance on September 12th, the unit was restored to 100 percent reactor power and remained there for the rest of the inspection period.

Unit 2 began the inspection period at 100 percent power and remained unchanged until August 28th, when reactor power was reduced to 97 percent to support waterbox cleaning. Upon restoration to 100 percent power, the 25 circulating water pump failed to start. Repairs were performed to the pump motor controls and the unit was restored to 100 percent on August 29th. On September 10th, reactor power was briefly reduced to 86 percent in support of main turbine valve testing and again reduced to 87 Percent on September 18th, in response to an unplanned lowering of condenser vacuum. On September 19th, 20th, and 21st, reactor power was reduced to 95 percent to support scheduled waterbox cleaning activities. Following the completion of this maintenance, the unit was returned to 100 percent reactor power. On September 22nd, reactor power was again reduced to 95 percent in preparation for a waterbox cleaning when operators entered AOP-7A, Loss of Saltwater Cooling, due to a significant reduction in salt water flow. Following the restoration of saltwater system flow on September 23rd, reactor power was restored to 100 percent.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather (71111.01 - 2 samples)

a. Inspection Scope

The inspectors reviewed the adverse weather preparations and mitigating strategies for potential tornado events. This review included an assessment of station procedures ERPIP 3.0, “Immediate Actions,” Attachment 20, “Severe Weather,” ERPIP 3.0, “Immediate Actions,” Attachment 21, “Personnel Recall for Severe Weather,” and Operations Administrative Policy OAP 00-01, “Severe Weather Operations.” Two risk significant systems were selected for this inspection, the 2A emergency diesel generator, and the Unit 2 service water system. The inspectors conducted discussions with control room operators and systems engineers to understand protective measures applicable to these systems, and performed partial field walkdowns of these systems to verify correct system alignment prior to potential tornado events.

The inspectors also reviewed the licensee’s response to an actual adverse weather event, a tornado warning, that occurred on September 8, 2004. Specifically, the inspectors reviewed ERPIP 3.0, “Immediate Actions,” Attachment 20, “Severe Weather,” and ERPIP 3.0, “Immediate Actions,” Attachment 21, “Personnel Recall for Severe Weather,” as well as Operations Administrative Policy OAP 00-01, “Severe

Weather Operations." The inspectors had discussions with control room operators and verified that the licensee appropriately implemented severe weather guidance.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q - 6 samples)

a. Inspection Scope

The inspectors verified that select equipment trains of safety-related and risk significant systems were properly aligned. The inspectors reviewed plant documents to determine the correct system and power alignments, as well as the required positions of critical valves and breakers. The inspectors verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or potentially impact the availability of associated mitigating systems. The applicable documents for this inspection are located in the Attachment. The inspectors performed the following partial system walkdowns.

- Unit 1 and Unit 2 500 kV/13.8 kV Electrical Lineup
- Unit 2 2A Emergency Diesel Generator
- Unit 2 23 Auxiliary Feedwater Pump
- Unit 2 21A Service Water Heat Exchanger
- Unit 2 22A Service Water Heat Exchanger
- Unit 2 22 ECCS Pump Room

b. Findings

No findings of significance were identified.

1R05 Fire Protection

1. Fire Brigade Annual Observation (71111.05A - 1 sample)

a. Inspection Scope

The inspectors observed a fire brigade drill conducted on September 10, 2004, which involved a simulated fire in the Unit 1 and Unit 2 Lube Oil Room located on the 12 foot elevation in the Turbine Building. The inspectors observed the brigade members donning protective equipment, transitioning to the scene of the simulated fire, checking adjacent spaces near the simulated fire, and fighting the simulated fire. The inspectors observed the fire brigade leader performing an assessment of the fire, evaluating the need for off-site assistance, communicating with team members and the control room supervisor, and directing the actions of the brigade to extinguish the fire. The inspectors attended the post drill debriefing conducted between the assessment team and the fire brigade members to assess the licensee's ability to identify areas with potential

weaknesses or isolated deficiencies. Constellation procedure SA-1-101, “Fire Fighting,” and the Fire Fighting Strategies Manual were referenced for this inspection activity. The applicable documents for this inspection are located in the Attachment.

b. Findings

No findings of significance were identified.

2. Fire Area Walkdowns (71111.05Q - 8 samples)

a. Inspection Scope

The inspectors walked down accessible portions of the plant to assess the licensee’s control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors assessed the material condition of fire protection suppression and detection equipment to determine whether any conditions or deficiencies existed which could impair the operability of that equipment. The inspectors also reviewed administrative procedure SA-1-100, “Fire Prevention,” during the conduct of this inspection. The applicable documents for this inspection are located in the Attachment. The inspectors toured the following areas important to reactor safety which represented eight inspection samples:

- Unit 1 and Unit 2 Intake Structure
- Unit 1 ECCS Pump Room
- Unit 2 ECCS Pump Room
- Unit 1 Turbine Driven Auxiliary Feedwater Pump Room
- Unit 2 Turbine Driven Auxiliary Feedwater Pump Room
- Unit 2 Containment Building 45' Elevation
- Unit 2 2A Emergency Diesel Generator
- Unit 2 Component Cooling Water Pump Room

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 External Flood and 3 Internal Flood Samples)

1. External Flooding

a. Inspection Scope

The inspectors reviewed flood protection measures associated with external flood events. These events were described in the Updated Final Safety Analysis Report (UFSAR), and are addressed in the emergency response procedures. The inspectors walked down risk significant areas at the site including the intake structure and outside areas near the plant structures and buildings. The inspectors reviewed watertight doors,

floor drains, penetrations, level alarm systems, and sump pumping systems. Additionally, the inspectors reviewed emergency response procedures to verify that they could reasonably be used to achieve the desired actions, including whether the flooding event could limit or preclude the required operator actions.

b. Findings

No findings of significance were identified.

2. Internal Flooding

a. Inspection Scope

The inspectors reviewed flood protection measures associated with internal flood events. These events were described in Calvert Cliffs Engineering Standard (ES)-001 "Flooding," the UFSAR, and the emergency response procedures. The inspectors performed a walkdown of the following three areas which contain risk significant systems: Emergency Diesel Generator Rooms 416, 421, and 422; Auxiliary Feedwater Pump Rooms 603, and 605, and the Unit 1 and Unit 2 Intake Structure. The inspections included observations and reviews of the following flood attributes: penetrations in floors and walls, watertight doors, drain systems and sumps, and sources of potential internal flooding not analyzed or adequately maintained. The review verified that the attributes were in accordance with ES-001 and the UFSAR.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q - 1 Sample)

a. Inspection Scope

The inspectors observed a licensed operator simulator training scenario conducted on August 19, 2004, in order to assess operator performance as well as the adequacy of operator requalification training. The scenario involved failures of the 11 component cooling water pump, a steam leak in the Turbine Building, a failure of a main steam isolation valve to close, and a reactor coolant pump shaft failure. These resulted in an automatic trip signal which was accompanied by a subsequent anticipated transient without scram (ATWS). During this inspection, the inspectors focused on high-risk operator actions performed during implementation of the emergency operation procedures, emergency plan implementation, and classification of the event. The inspectors evaluated the clarity and formality of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operations and manipulations, and the oversight and direction provided by the shift supervisor. The inspectors also reviewed simulator fidelity to evaluate the degree of similarity to the actual control room, especially regarding recent control board

modifications. The applicable documents associated with this inspection are located in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 4 samples)

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing routine maintenance activities. This review included an assessment of the licensee's practices pertaining to the identification, scoping, and handling of degraded equipment conditions, as well as common cause failure evaluations, and the resolution of historical equipment problems. For those systems, structures, and components scoped in the maintenance rule per 10 CFR 50.65, the inspectors verified that reliability and unavailability were properly monitored and that 10 CFR 50.65 (a)(1) and (a)(2) classifications were justified in light of the reviewed degraded equipment condition. Documents applicable to this inspection are listed in the Attachment. The inspectors conducted this inspection for the following equipment issues.

- Unit 1 12 Control Room HVAC Circuit #1 Replacement
- Unit 1 12 Charging Pump Internal Check Valve Replacement
- Unit 2 22 LPSI Pump Greasing Activity
- Unit 1 and Unit 2 Service Water Heat Exchanger Cleanings

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13 - 7 samples)

a. Inspection Scope

The inspectors reviewed the licensee's assessments concerning the risk impact of removing from service those components associated with the work items listed below. This review primarily focused on activities determined to be risk significant within the maintenance rule. The inspectors compared the risk assessments and risk management actions performed by station procedure NO-1-117, "Integrated Risk Management," to the requirements of 10 CFR 50.65(a)(4), the recommendations of NUMARC 93-01, Revision 2, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Section 11, "Evaluation of Systems to Be Removed From Service," and approved station procedures. The inspectors compared the assessed risk configuration to actual plant conditions to evaluate whether the assessment was accurate and comprehensive. In addition, the inspectors assessed the

adequacy of the licensee's identification and resolution of problems associated with maintenance risk assessments and emergent work activities. The applicable documents for this inspection are located in the Attachment. The inspectors reviewed the following selected work activities:

- Unit 1 11 CCHX External Leak Repair
- Unit 1 'D' RPS Channel Power Supply Replacement
- Unit 1 11 S/G Steam Flow Recorder Replacement
- Unit 2 23 Condensate Pump Pressure Gauge Replacement
- Unit 2 22 Steam Generator Feed Pump Speed Control Power Supply Replacement
- Unit 1 and Unit 2 500kV Breaker Maintenance (552-22, 552-43, 552-63)
- Unit 1 and Unit 2 0C Hand Switch Replacement

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events (71111.14 - 2 samples)

1. 22A and 22B Service Water Heat Exchanger Debris Fouling Event

a. Inspection Scope

On September 22, 2004, at 11:28 p.m., following post-maintenance testing of the 23 salt water pump discharge check valve, control room operators received alarms associated with the Unit 2 turbine lube oil cooler and the 22 ECCS pump room cooler strainer. Unit 2 reactor power was being maintained at 95 percent at that time in preparation for scheduled cleaning of the 22A waterbox. After acknowledging the alarms, control room operators noted a significant reduction in saltwater flow through the 22A and 22B service water heat exchangers, and entered AOP-7A, "Loss of Saltwater Cooling." This reduction in flow occurred when the 22 saltwater pump was started after the 23 saltwater pump was secured. In accordance with AOP-7A, operators reduced Unit 2 main generator reactive power (VARS) to zero and performed multiple manual flushes of the 22A and 22B SRW Heat Exchanger strainers. At 11:40 p.m., operators exited AOP-7A, after flow through the service water heat exchangers was reestablished. The licensee concluded that the flow reduction was caused by debris that was drawn into the 22 saltwater header when the 22 saltwater pump was started. This event was documented in the licensees corrective action program as IRE-000-279.

In order to assess operator performance during this abnormal event, the inspectors obtained and reviewed operators logs, plant computer data, and station procedures. The inspectors also conducted discussions with various operations personnel, and reviewed AOP-7A to understand entry conditions and required actions contained within the procedure to assess operator performance during the event. Based on this review, the inspectors concluded that the licensee's response was appropriate and in

accordance with approved operating procedures. The applicable documents for this inspection are located in the Attachment.

b. Findings

No findings of significance were identified

2. Unit 2 Emergent Power Reduction Due To 23 Condenser Shell Fouling

a. Inspection Scope

The inspectors assessed operator performance associated with an emergent power reduction that occurred on September 18, 2004, when Unit 2 control room operators entered AOP-7G, "Loss of Condenser Vacuum," and performed a rapid power reduction in accordance with OP-3 "Normal Power Operations." These actions were performed to ensure that condenser vacuum did not inadvertently lower to the point that a manual turbine trip, and a subsequent reactor trip was required.

At approximately 12:18 p.m. on September 18th, Unit 2 control room operators received a "CW Temp Hi" alarm. Plant operators were dispatched to investigate the cause for the alarm and noted that the amps associated with 25 circulating water pump were oscillating by approximately 15 amps, and were less than those indicated for the other circulating water pumps. At 12:44 p.m. control room operators were notified that the 23A amertap screen differential pressure was approximately 45 inches. This condition rendered the screen incapable of being rotated electrically or mechanically. In order to remain above the manual reactor trip criteria as stated in AOP-7G, control room operators reduced reactor power to approximately 87 percent and secured the 25 circulating water pump. Subsequently, the condenser amertap screens were successfully rotated which removed debris and restored flow through the condenser. These actions supported the restart of the 25 circulating water pump. The licensee determined that this event was caused when an abnormally large amount of unpredicted debris entered into the intake care and significantly fouled the 23A amertap screen. Following this event, the waterbox was removed from service and cleaned.

In order to assess operator performance during this abnormal event, the inspectors obtained and reviewed control room recorder plots of condenser vacuum and control room logs, conducted discussions with various operations personnel, and reviewed AOP-7G to understand entry conditions and required actions contained within the procedure. Based on this review, the inspectors concluded that the licensee's response was appropriate and in accordance with approved station operating procedures. The applicable documents for this inspection are located in the Attachment.

b. Findings

No findings of significance were identified

1R15 Operability Evaluations (71111.15 - 9 samples)

a. Inspection Scope

The inspectors reviewed operability determinations to verify that the operability of systems important to safety was properly established, that the affected components or systems remained capable of performing their intended safety function, and that no unrecognized increase in plant or public risk occurred. In addition, the inspectors reviewed the selected operability determinations to verify they were performed in accordance with NO-1-106, "Functional Evaluation - Operability Determination," and QL-2-100, "Issue Reporting and Assessment." The applicable documents for this inspection are located in the Attachment. The inspectors reviewed the operability evaluations for the issues listed below.

- Unit 1 and Unit 2 10 CFR Part 21 Q10AX-Style SBM Switches
- Unit 1 1-SI-399, SDC Recirc Stop Valve, Failed Stroke Time Testing
- Unit 1 1A EDG D -12 Damper Failure Following EDG Maintenance
- Unit 1 14A 480V Load Center Non-Conforming Scaffold
- Unit 1 11 Cavity Cooling Fan Failure to Operate
- Unit 1 Component Cooling Water Heat Exchanger Tube Failures
- Unit 2 22 LPSI Pump Failure to Reinstall Grease Relief Plugs
- Unit 2 22B SRW HX External Leakage
- Unit 2 22 ECCS Pump Room Air Cooler Non-Conforming Scaffold

b. Findings

Introduction. The inspectors identified a Non-Cited Violation (NCV) of very low safety significance (Green) for the licensee's failure to brace scaffolding, when erected within the close proximity of safety-related components, as specified in station procedure MN-1-203, "Scaffold Control," and required by Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

Description. On January 22, 2004, during a Unit 1 electrical system walkdown, inspectors from a baseline team NRC Safety System Design Inspection (SSDI) identified that scaffolding adjacent to the Unit 1, 14A, 480 Vac safety-related load center was not constructed in accordance with station procedures. Specifically, MN-1-203, "Scaffold Control" procedure, requires the use of bracing for scaffolding constructed within twelve inches of safety-related components. This scaffolding was not constructed in accordance with the procedure since it was constructed approximately four inches away from the 14A load center cooling fins and was not braced. The inspectors informed control room personnel and the scaffolding was immediately removed from the area. The licensee documented this deficient condition into their corrective actions program as IRE-000-090. This unresolved item (URI) was previously documented as NRC (URI) 05000317/2004002-5, Improperly Erected Scaffold, pending the licensees completion of an operability evaluation, and the NRCs subsequent review and assessment of operability, and potential risk impact to safety-related equipment.

On March 16, 2004, the licensee completed an operability evaluation, as part of the root cause analysis, which concluded that the scaffolding would have contacted at least one 14A load center cooling fin during a design basis safe shutdown earthquake (SSE) event. Furthermore, the analysis determined that this cooling fin would have ultimately developed a leak at the point of contact resulting in overheating and subsequent failure of the 14A load center. The root cause analysis also concluded that the cause for the improperly constructed scaffolding was a human error from not complying with the approved station procedure used to fabricate the scaffolding. The licensee conducted training with scaffold builders and supervisors to discuss this issue, and reemphasize procedural requirements as the appropriate corrective actions designated in the casual analysis. The licensee entered this deficient condition in their corrective action program as IR4-007-099.

On September 14, 2004, during a routine plant walkdown, NRC inspectors identified another inadequately constructed scaffolding in the area of the 22 ECCS pump room air cooler. The scaffolding was built approximately nine inches away from the 22 ECCS pump room air cooling fins without bracing. The inspectors noted that the scaffolding was constructed in a similar manner to the scaffold constructed near the 14A 480 Vac load center on January 22, 2004. The inspectors immediately notified control personnel and questioned the operability of the 22 ECCS pump room air cooler. Personnel were dispatched to remove the scaffolding, and the deficiency was entered into the licensees corrective action program as IRE-000-090. As a result of this NRC-identified deficiency, the licensee conducted a prompt investigation which included a walkdown by plant management of all scaffolding erected in the vicinity of safety and non-safety equipment. No additional scaffolding deficiencies were identified. In response to this second occurrence, however, existing procedural requirements for scaffolding construction were enhanced including management approval for completed scaffolding projects.

The licensee performed an operability evaluation and determined that the scaffolding would not have adversely impacted the 22 ECCS pump room air cooler. The inspectors reviewed the licensees operability evaluation and performed independent walkdowns of safety-related as well as non-safety related areas to assess the quality of erected scaffolding and concluded that the licensees corrective actions were reasonable.

Analysis. The inspectors determined that the licensee's failure to construct scaffolding in accordance with station procedure MN-1-203, "Scaffold Control," as identified on January 22, 2004, when erected in the vicinity of safety-related equipment to be a performance deficiency. Traditional enforcement does not apply for this finding because it did not have any actual safety consequences or potential for impacting the NRC's ability to perform its regulatory function nor was it the result of any willful violation of licensee or NRC requirements.

The finding is greater than minor since it was associated with the mitigating system cornerstone's human performance attribute, and affected this cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). In addition, this finding

is closely related to Manual Chapter (MC) 0612, Power Reactor Inspection Reports, Appendix E, Example 4.a., Insignificant Procedural Errors, in that the engineering evaluation concluded that this deficiency constituted an actual impact on safety.

The inspectors determined that this finding was of very low safety significance (Green) using a Phase 1 risk assessment in accordance with the Significance Determination Process (SDP) for reactor inspection findings for at-power situations. The licensee determined the increase in core damage probability (CDP) was approximately 7.4 E-8 (delta core damage frequency (CDF) was 3.0E-6/yr). This finding was further mitigated because Unit 1 did not experience a safety system failure since the 14B, 480 Vac load center remained operable, and inservice during the nine day duration that this scaffolding deficiency existed.

This finding contains aspects of one cross-cutting area, Human Performance, since the scaffolding constructed near the 480 Vac load center was not constructed in accordance with procedure MN-1-203, "Scaffold Control."

Enforcement. Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978. Specifically, Regulatory Guide 1.33, Section 9, Procedures for Performing Maintenance, includes procedures for properly preplanning and performing maintenance that can affect the performance of safety-related equipment. Contrary to this requirement, on January 14, 2004, the licensee did not properly implement approved station procedures and brace scaffolding near the Unit 1, 14A 480 Vac load center as required by MN-1-203, "Scaffold Control," to preclude impact with the load center's cooling fins during a seismic event. Because the failure is of a very low safety significance and has been entered into the corrective actions program as IR4-007-099, this violation of TS 5.4.1.a is being treated as an NCV consistent with Section VI.A.1 on NRC Enforcement Policy and is identified as NCV 50-317/2004-06-01, Failure To Properly Brace Erected Scaffolding.

1R16 Operator Workarounds (71111.16A - 1 sample)

a. Inspection Scope

The inspectors evaluated the cumulative effects of operator workarounds for potential effects on the functionality of mitigating systems. The workarounds were reviewed to determine: (1) if the functional capability of the system or human reliability in responding to an initiating event was affected; (2) the effect on the operator's ability to implement abnormal or emergency procedures; (3) if operator workaround problems were captured in the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A - 2 samples)

a. Inspection Scope

The inspectors reviewed permanent plant modifications to verify the adequacy of the modification package, and to verify that the design and licensing bases requirements of the system were not degraded during the associated work activities. The inspectors also verified that post-modification testing was completed in accordance with established station procedures which adequately demonstrated continued reliability and satisfactory performance of the associated systems. The inspectors interviewed cognizant licensee personnel and performed system walkdowns to verify the modifications were implemented as planned. Documents reviewed during the course of this inspection are listed in the Attachment.

- Replacement of 2CKSW-111, 23 Saltwater Pump Discharge Check Valve
- 23 AFW Pump Outboard Bearing and Bearing Housing Replacement

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 samples)

a. Inspection Scope

The inspectors observed and/or reviewed post-maintenance tests associated with the following work activities to verify that equipment was properly returned to service and that proper testing was specified and conducted to ensure that the equipment could perform its intended safety function following maintenance. The applicable documents for this inspection are located in the Attachment. Post-maintenance testing associated with the following maintenance activities were reviewed.

- 11A SRW Heat Exchanger following cleaning
- 11 Salt Water Header flow verification following cleaning
- 11 Component Cooling Water Heat Exchanger following cleaning
- 12 Salt Water Header flow verification following cleaning
- 13 Charging Pump following piston repacking
- 23 AFW Pump testing following bearing housing modification

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 4 samples)

a. Inspection Scope

The inspectors observed and/or reviewed the four surveillance tests listed below associated with selected risk-significant systems, structures, and components (SSCs) to verify that technical specifications were properly complied with, and that test acceptance criteria were properly specified. The inspectors also verified that proper test conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria had been met. The applicable documents for this inspection are located in the Attachment. The following inspection activities represented four inspection samples:

- STP-M-551A-0, Unit 1, 11 Battery Charger Operability Test
- OI-29, Section 6.34, Unit 1, 11B Service Water Heat Exchanger Performance
- STP-O-63-1, Unit 1 Remote Shutdown and Post Accident Monitoring Instrument Channel Check
- STP-O-8A-2, Unit 2, 2A Emergency Diesel Generator Test

b. Findings

No findings of significance were identified

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System (ANS) Testing (71114.02 - 1 Sample)

a. Inspection Scope

An onsite review of the licensee's Public Notification System (PNS) was conducted to ensure prompt notification of the public for taking protective actions. The inspector interviewed the siren system engineer and reviewed test records from 2003 and 2004 and associated issue reports (IRs) to determine if test failures were being immediately assessed and repaired and sirens were being routinely maintained. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 02, and the applicable planning standard, 10 CFR 50.47(b)(5) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03 - 1 Sample)

a. Inspection Scope

An onsite review of Calvert Cliffs's ERO augmentation staffing requirements and the process for notifying the ERO was conducted to ensure the readiness of key staff for responding to an event and timely facility activation. The inspector reviewed documented ERO response drill activities in 2003 and 2004 and the associated IRs. Emergency plan qualification records were sampled for key ERO positions to ensure that qualifications were current. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, and the applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) Revision Review (71114.04 - 1 Sample)

a. Inspection Scope

During this inspection, the inspector sampled licensee assessments for decreases in the effectiveness for recent changes to emergency preparedness documents. Also, a regional in-office review was conducted of licensee-submitted revisions to the emergency plan, implementing procedures and EAL changes which were received by the NRC during the period of March - July 2004. A thorough review was conducted of plan aspects related to the risk significant planning standards (RSPS), such as classifications, notifications and protective action recommendations. A cursory review was conducted for non-RSPS portions. During the inspection, the inspector evaluated the associated 10 CFR 50.54(q) reviews to determine if the changes had decreased the effectiveness of the plan. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05 - 1 Sample)

a. Inspection Scope

The inspector reviewed IRs initiated by Calvert Cliffs from drills, tests, and self-assessments and the associated corrective actions to determine the significance of

the issues and to determine if repeat problems were occurring. A list of IRs are contained in an attachment to this report. Also, the 2002 and 2003 audit reports were reviewed to assess Calvert Cliffs's ability to identify issues, assess repetitive issues and the effectiveness of corrective actions through their independent audit process. The inspector reviewed Calvert Cliffs's barrier analysis report for their assessment of the impact of a blackout on emergency response capability. In light of unusual events declared at several sites in NRC Region III due to an earthquake, the inspector reviewed the licensee' s capability to declare an emergency associated with an earthquake. This inspection was conducted according to NRC Inspection Procedure 71114, Attachment 05, and the applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 2 samples)

a. Inspection Scope

The inspectors observed a control room simulator training exercise conducted on August 19, 2004, to assess licensed operators' performance in the area of emergency preparedness. This training exercise focused on equipment failures and operator challenges that would typically exist during RCP seal package failures which resulted in LOCA events. The required procedural transitions and associated event classifications were observed and evaluated by the inspectors.

The inspectors also observed and evaluated the licensee's performance in an emergency preparedness exercise conducted on July 27, 2004. The inspectors reviewed the drill scenario to determine if elements of the licensee's Radiological Emergency Plan would be sufficiently challenged. Licensee activities inspected during the exercise included those occurring in the Technical Support Center. The NRCs assessment focused on the timeliness and location of classification, the notification and protective action recommendations (PAR) development activities, and the licensee's expectations of response. The performance of the emergency response organization was evaluated against applicable licensee procedures and regulatory requirements. The inspectors reviewed deficiencies identified by the licensee in a post-critique meeting and accompanying corrective actions.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator (PI) Verification (71151 - 8 Samples)

Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from April 2004 through June 2004. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 2 were used to verify the accuracy of the PI data reported during that period and the basis in reporting for each data element.

- Safety System Unavailability, Emergency AC Power
- Safety System Unavailability, Heat Removal System (Auxiliary Feedwater)
- Safety System Unavailability, Residual Heat Removal System
- Safety System Functional Failures

The inspectors reviewed the licensee's PI data and plant records associated with the PIs listed above for both units, including licensee guidance and procedures for PI collection. The inspectors also reviewed licensee event reports, selected operator narrative logs, system health reports, interviewed applicable licensee personnel to verify the accuracy and completeness of Calvert Cliff's PI data, and reviewed the accuracy of the number of required/critical hours reported to the NRC.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

1. Continuous Corrective Action Review by Resident Inspectors

a. Inspection Scope

The inspectors performed a daily screening of items entered into the licensee's corrective action program as required by Inspection Procedure 71152, "Identification and Resolution of Problems." The review facilitated the identification of potentially repetitive equipment failures or specific human performance issues for follow-up inspection. It was accomplished by reviewing each issue report and attending daily screening meetings, and accessing the licensee's computerized database.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

1. (Closed) LER 05000317/2004-001-00 Reactor Trip During Scheduled Maintenance

On March 20, 2004, Calvert Cliffs Unit 1 reactor automatically tripped during the performance of scheduled maintenance. While replacing a chart recorder in the control room, instrument technicians created a short on the "C" phase of the instrument bus 1Y09. This deficient condition resulted in a significant decrease in the 11 steam generator water level and a subsequent reactor trip. On May 14, 2004, an NRC Special Inspection Team conducted an inspection and documented the associated findings in NRC Special Inspection Report No 05000317,318/2004-008. This self-revealing event identified a finding because the licensee failed to perform an adequate design review as required by station procedures which led to the reduced reliability of the digital feedwater system.

The licensee documented this event in their corrective actions as IR200400168, "March 20, 2004 Unit 1 Reactor Trip Root Causal Analysis IR4-028-774." The LER was reviewed by the inspectors and no findings of significance were identified. This LER is closed.

2. (Closed) LER 05000318/2004-001-00 Reactor Trip Due to Low Steam Generator Water Level After Feed Pump Trip

On January 23, 2004, Calvert Cliffs Unit 2 reactor automatically tripped from 100 percent reactor power due to low steam generator water level. This event was initiated when the 22 steam generator feed pump tripped. The failure of a relay in the reactor regulating system circuit resulted in an over-cooling event of the reactor coolant system. On May 14, 2004, an NRC Special Inspection Team concluded their inspection and documented the associated findings in NRC Special Inspection Report No 05000317/2004008 and 05000318/2004008. This self-revealing event identified a finding because the licensee failed to perform a modification design review as required by station procedures which led to the failure of the relay, an uncontrolled cooldown, and a loss of normal heat removal. The licensee documented this event in their corrective actions as IR200400053, "22 Steam Generator Feed Pump Trip Resulting in Unit 2 Plant Trip, Root Casual Analysis, Issue Report IR4-028-786." The LER was reviewed by the inspectors and no findings of significance were identified. This LER is closed.

4OA4 Cross Cutting Aspects of Findings

Section 1R15 describes a finding associated with improperly braced scaffolding which was constructed in the vicinity of safety related equipment. This finding contains aspects of one cross-cutting area, Human Performance. Procedures used to construct scaffolding contained specific precautions and final construction checkoff sheets to prevent improper scaffold erection and were not properly followed.

4OA5 Other Activities

1. (Closed) URI 50-317,318/2004-02-05, Improperly Erected Scaffold

On January 22, 2004, during a Unit 1 electrical system walkdown, inspectors from a baseline NRC Safety System Design Inspection (SSDI) inspection team identified that a scaffold adjacent to the Unit 1, 14A, 480 Vac load center was not constructed in accordance with procedural requirements. This NRC identified finding was identified as an "improperly erected scaffold" pending a operability evaluation to determine safety impact. The licensee documented this deficient condition into their corrective action program as IR4-007-099. On March 16 2004, the licensee completed the operability evaluation as part of a root cause analysis which concluded that the scaffolding would have contacted at least one 14A load center cooling fin during a design basis safe shutdown earthquake (SSE) resulting in a leak at the point of contact which could cause the 14A, 480 Vac load center to overheat and fail.

The inspectors reviewed this URI and documented the inspection results in Section 1R15 of this report. This URI is closed.

2. (Opened) URI 50-317,318/2004-06-02 Saltwater/Service Water Heat Exchanger Fouling

The inspectors reviewed an event caused by hydroid (marine life) debris fouling of the saltwater and service water systems. Specifically, on September 22, 2004, Unit 2 operators entered AOP-7A, "Loss of Saltwater Cooling" in response to a significant reduction in flow to the 22A and 22B service water heat exchangers; turbine lube oil temperature alarms; and a 22 ECCS air cooler strainer alarm. Operators performed multiple manual flushes of the 22A and 22B SRW heat exchangers and entered an unplanned LCO for cleaning the 22 CCHX.

The inspectors reviewed saltwater/service water performance data, station procedures and reactors operators logs. The inspectors also conducted interviews with cognizant licensee personnel to assess the causes of the fouling and the safety implications associated with the recent debris clogging events. (Refer to Section 1R14, Items 1 and 2)

This issue is unresolved pending the licensee's completion of an Issue Response Team report, which will address the short-term and long-term corrective actions associated with minimizing hydroid growth affects which led to debris-related events, and the NRCs review and assessment of these actions intended to preclude recurring events. This unresolved issue is identified as URI 50-317,318/2004-06-02, Saltwater/Service Water Heat Exchanger Fouling.

40A6 Meetings, including Exit

On October 1, 2004, the inspectors presented the inspection results to Mr. Kevin Neitmann, Plant General Manager, and other members of his staff. The licensee had

no objections to the NRC's finding or observations. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

W. Birney, Emergency Preparedness Training Project Manager
E. Kreahling, System Engineer
M. Geckle, Manager, Nuclear Operations
T. Gill, Security Maintenance Analyst
G. Gwiazdowski, Director, Nuclear Security
S. Henry, Principal Engineer
L. Larragoite, Director of Licensing
K. Mills, Operations General Supervisor
K. Neitmann, Plant General Manager
R. Pace, Shift Manager
G. Rudiger, Senior Emergency Preparedness Analyst
B. Scotland, Performance Management Analyst
R. Woods, Emergency Preparedness Analyst
M. Yox, Senior Emergency Analysis

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

50-317,318/2004-06-02	URI	Saltwater/Service Water Heat Exchanger Fouling (Section 4OA5.2)

Closed

50-317,318/2004-02-05	URI	Improperly Erected Scaffold (Section 4OA5.1)
50-317/2004-001-00	LER	Reactor Trip During Scheduled Maintenance (Section 4OA3.1)
50-318/2004-001-00	LER	Reactor Trip Due to Low Steam Generator Water Level After Feed Pump Trip (Section 4OA3.2)

Opened and Closed

50-317/2004-06-01	NCV	Failure To Properly Brace Erected Scaffolding (Section 1R15)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Tornado Watch Preparations and Tornado Watch Event

ERPIP 3.0 Attachment 20, Severe Weather
ERPIP 3.0 Attachment 21, Personnel Recall for Severe Weather
Operations Administrative Policy OAP 00-01, Severe Weather Operations

Section 1R04: Equipment Alignment

Unit 2 23 Auxiliary Feedwater Pump Replacement of Outboard Thrust Bearing Housing

MO# 2200103181 Replace #23 AFW Outboard Thrust Bearing Housing
Clearance ID# 2200400060 Tagout 23 AFW Pump
Dwg.# 62583 Auxiliary Feedwater
Dwg.# 63079SH0054B Schematic Diagram Auxiliary Feedwater Motor Driven Pump

Unit 2 21A Service Water Heat Exchanger for full plate cleaning

Clearance ID# 2200400277 Main Boundaries for 21A Service Water Heat Exchanger
Dwg.# 62708SH0003 Circulating Saltwater System
Dwg.# 62706SH0002 Service Water Cooling System Auxiliary Building and Containment
Dwg.# 62712SH0005 Compressed Air System Plant & Instrument Air

Unit 2 22A Service Water Heat Exchanger for full plate cleaning

MO# 2200303615 Clean 22A SRW HX
Clearance ID# 2200400297 Clean 22A SRW HX

2A Emergency Diesel Generator

Drawing: 61001SH0001, Rev 41, Electrical Main Single Line Diagram FSAR Figure 8-1
Drawing: 61001SH0002, Rev 6, Diesel Generator Project Electrical Main Single Line Diagram
Drawing: 64320, Rev 9, Simplified System Drawing Diesel No. 2A, Starting Air, Fuel & Lube Oil

500/13.8/4kV Electrical Distribution

Drawing: 61001SH0001, Rev 41, Electrical Main Single Line Diagram FSAR Figure 8-1

22 ECCS Pump Room

Drawing 60731SH0001, Rev 77, Safety Injection & Containment Spray Systems
Drawing 60731SH0002, Rev 42, Safety Injection & Containment Spray Systems

Drawing 60731SH0003, Rev 25, Safety Injection & Containment Spray Systems
Drawing: 61007, Rev 37, Single Line Meter 8 Relay Diagram, 11A, 11B, 14A, 14B, FSAR Figure 8-1
Memorandum from A.L. Simpson to M.J. Gahan dated March 16 2004, Subject : Resolution IR4-007-099, Based on Observation (#249) Made by NRC Inspectors During a SSDI
AIT IR2004000007, Milestone 3, Scaffold Erected within 12" of 14A Loadcenter

Section 1R05: Fire Protection

SA-1-101, Fire Fighting
Fire Fighting Strategies Manual

Section 1RO6: Flood Protection Measures

Updated Final Analysis Report
Engineering Standard (ES) - 001
ERPIP-3.0 Attachment 20, Severe Weather

Section 1R11: Licensing Operator Requalification

ERPIP 3.0, Immediate Actions
OP -12 Rev 6 Simulator Operating Examination for the Licensed Operator Training Program at the Calvert Cliffs Nuclear Power Plant, approved on July 28, 2004.

Section 1R12: Maintenance Effectiveness

Unit 1 12 SWGR Room HVAC Circuit #1 Failure

IR4-033-442 - 12 SWGR HVAC Ckt 1 is tripped
MO# 1200403629 - Replace the “A” Compressor SWGR HVAC Unit

Unit 1 23 Charging Pump Low Flow Conditions

IR4-030-008 - While performing PE 2-41-3-0-W (idle charging pump rotation) 23 charging pump was started and oscillating amp and lower than normal flow was indicated.
IR4-037-821 - 12 Charging Pump was started for STP-73D and exhibited oscillating amps along with abnormal noise.
Category II Resolution Document for 23 Charging Pump Low Flow Indications
Memorandum from Dale McElheny to Kent Mills dated 9/10, 2004 - Revised Charging Pump Venting Strategy

Unit 1 1-SI-399 Failed Stroke Time Testing

STP-O-65S-1 - ECCS LPSI Loop Isolation Valves Quarterly Operability Test
EOP 5 Loss of Coolant Accident
IR4-037-958 - 1-SI-399 MOV failed to stroke full shut electrically

MO 1200403996, During STP-O-65S-1, 1-SI-399MOV Failed to Stroke Full Shut

Unit 2 22 LPSI Pump Failure To Reinstall Grease Plugs

Lube - 02 General Lubrication Procedure
IRE-000-172 - Grease plugs were found not installed during ABO rounds
Prompt Investigation Report IRE-000-172
MO# 2200401183 - Lubricate #22 LPSI Pump and Motor
Reactor Operators Log
Texaco Premium RB Grease Specifications Sheet
Material Safety Data Sheet (MSDS) for Premium RB Grease

Unit 1 and Unit 2 Saltwater Heat Exchanger Cleanings

IR4-033-267, 21B SRW HX Would not Pass Required Flow IAW OI-29, 6.34
IRE-000-069, 11 CCHX Would not Pass Required Flow IAW OI-29, 6.34
Generic Letter 89-13 : Service Water System Problems Affecting Safety-Related Equipment
MN-1-100, Rev 22, Conduct of Maintenance
OI-29-1(2), Section 6.22, De-watering a CCHX

Section 1R13: Maintenance Risk Assessment and Emergent Work Evaluation

Unit 1 11 CCHX External Leak Repair

MO# 1200400500 - Remove 11 CCHX from service and replace repair/replace 1TP5206 which is leaking at the flange area.

Unit 1 'D' RPS Channel Power Supply Replacement

IR4-037-934, RPS Channel "D" Voltage Indicates Fluctuations Greater than Normal
MO1200405101, RPS Channel "D" Voltage Indicates Fluctuations Greater than Normal

Unit 1 11 S/G Steam Flow Recorder Replacement

MO# 1200304439 Replace 1FR1011/1111, 11 S/G Steam Flow Recorder
ES200300708-001 Replace 1FR1011/1111 with new model
FTI - 106 Instrument Functional test Procedure

Unit 2 23 Condensate Pump Inadvertent Actuation

IR4-037-910 While performing work on 2-PI-4428 under MO# 2200104421 23 Condensate Pump Auto Started
MO# 2200104421 - 23 Condensate Pump Discharge PI
Root Causal Analysis IR4200400205 - Inadvertent Fire System Sprinkler and Deluge Actuation
Root Causal Analysis IR200400468 - Inadvertent Auto-Start of #23 Condensate Pump Motor
Prompt Investigation report IR Number IR4-037-910

Unit 2 22 Steam Generator Feed Pump Speed Control Power Supply Replacement

MO 2200403705, 22 SGPF LPEHC Cabinet Power Supply Monitor

Unit 1 and Unit 2 500kV Breaker Maintenance (552-22, 552-43, 552-63)

MN-1-124, Rev 6, Conduct of Integrated Work Management
Drawing: 61001SH0001, Rev 41, Electrical Main Single Line Diagram FSAR Fig. No. 8-1
MO 0200401975, Yard Breaker 552-43 A0 Column 5 Pressure is Reading Approximately
IR4-036-453, 522-43 Breaker A0 Column 5 Pressure is Reading Approximately 900 psig

Unit 1 and Unit 2 0C Hand Switch Replacement

MO 2200302401, Replace 2HS424, 24 Bus 4KV Voltmeter Selector Switch

Section 1R14: Personnel Performance During Non-Routine Plant evolutions

AOP 7A Loss of Saltwater Cooling Event

AOP -7A Loss of Saltwater Cooling
Reactor Operators Log
Saltwater Flow verification Performance Evalution dated October 7, 2004

AOP 7G, Loss of Condenser Vacuum Event

AOP-7G, Loss of Condenser Vacuum
EOP-2 Loss of Offsite Power/Loss of Forced Circulation
Generic Letter 89-13
Reactor Operators Log

Section 1R15: Operability Evaluations

Unit 1 and Unit 2 10 CFR Part 21 Q10AX-style SBM Switches
10 CFR Part 21 Communication, dated July 12, 2004, concerning SBM Switch Coined Contact Assembly
RECO for Part 21 Issued SBM Switch Style Q10AX
IR4-037-326, 10 CFR Part 21 SBM Switch Coined Contact Assembly
IR4-027-134, GE Issued a Part 21 for SBM Switch Style Q10X

Unit 1 1-SI-399 Failed Stroke Time Testing

STP-O-65S-1 - ECCS LPSI Loop Isolation Valves Quarterly Operability Test
EOP 5 Loss of Coolant Accident
IR4-037-958 - 1-SI-399 MOV Failed to Stroke Full Shut Electrically
MO 1200403996, During STP-O-65S-1, 1-SI-399MOV Failed to Stroke Full Shut
RECO, 1-SI-399-MOV Degraded Operator

Drawing 60731SH0001, Rev 77, Safety Injection & Containment Spray Systems
Drawing 60731SH0002, Rev 42, Safety Injection & Containment Spray Systems
Drawing 60731SH0003, Rev 25, Safety Injection & Containment Spray Systems
NO-1-106, Rev 10, Functional Evaluation/Operability Determinations

Unit 1 1A EDG Damper D-12 Failure Following EDG Maintenance

IR4-034-668 During PMOT for 1A EDG 1-MO-10552 (recirc damper) Failed to Operate
IR4-033-419 1-MO-10552 Failed to Stroke During Performance of OI-22M Section 6.9 Cycle of 1A DG Ventilation Dampers

Unit 1 14A 480V Load Center Non-Conforming Scaffold

Drawing: 61007, Rev 37, Single Line Meter 8 Relay Diagram, 11A, 11B, 14A, 14B, FSAR Figure 8-1
Memorandum from A.L. Simpson to M.J. Gahan dated March 16 2004, Subject : Resolution IR4-007-099, Based on Observation (#249) Made by NRC Inspectors During a SSDI
AIT IR2004000007, Milestone 3, Scaffold Erected within 12" of 14A Loadcenter

11 Cavity Cooling Fan Failure

Complex Troubleshooting Report IR No. E000171
IRE-000-171 - Received “U-1 480V U/V Trip” Alarm. Found 11 Cavity Cooling Fan Off.
MO# 1200405178 - #11 Cavity Cooling fan, Install a New Motor.
12 Cavity Cooling Fan Contingency Plan

Unit 1 Component Cooling Water Heat Exchangers Tube Failures

Operability Determination 04-004 Component Cooling Heat Exchangers (revised)
IR4-030-055 - 12 CCHX has a Tube Leak.
IR4-030-512 - A Rattle Noise was observed on the SW Inlet End of the 12 CCHX.
Root Casual Analysis IR200400254 12 CCHX Tube Failure

Unit 2 22 LPSI Pump Failure to Reinstall Grease Relief Plugs

Lube - 02 General Lubrication Procedure
IRE-000-172 - Grease Plugs were Found Not Installed During ABO Rounds
Prompt Investigation Report IRE-000-172
MO# 2200401183 - Lubricate #22 LPSI Pump and Motor
Reactor Operators Log
Texaco Premium RB Grease Specifications Sheet
Material Safety Data Sheet (MSDS) for Premium RB Grease

Unit 2 22B SRW HX External Leakage

RECO for IR4-033-993 External Leakage on 22B SRW HX
OI-15 Service Water System

IR4-033-993 - 22B SRW has an identified leak of approximately 1 GPM.

Unit 2 22 ECCS Pump Room Air Cooler Non-Conforming Scaffold

IR4-007-099, IRE-000-090, IRE-000-370,
IR4-036-628, Not Appropriate to Exempt 50.59 Requirements from MN-1-204, Rev 14
AIT IR200400061, Milestone 2
Operability Determination to Determine Impact of Scaffold on 22 ECCS Pump Room Air Cooler
MN-1-203, Rev 15, Scaffold Control
MD-1-100, Rev 10, Temporary Alternations
EN-1-102, Rev 9, 10CFR 50.59/10 CFR 72.48 Reviews
Regulatory Guide 1.33, Rev 2, Quality Assurance Program Requirements (Operation)
Regulatory Guide 1.29, Rev 3, Seismic Design Classification
AOP-7I, Rev 22, Section XXIV. 14A 480 Volt Bus
AOP-7I, Rev 22, Section XXV Reactor MCC 104R
MO 2200403704, 22 ECCS Basket Strainer Number One is Clogged
Drawing, 1E-009, 61009, Rev 38, Single Line Meter & Relay Diagram 480V Unit Buses
Drawing, 61017SH0001, Rev 35, Single Line Diagram Reactor 480V MCC 104R

Section 1R16: Operator Work-Arounds

Cumulative Operator Work-Arounds
MO 1200402185, 11 MSIV Hydraulic Fluid Level
MO 2200401531, Use DVM to Read CEA 54 Position
MO 1200403154, Drain Quench Tank as Required Due to Leakage
MO 1200403039, 1B EDG Dead Spot Noted at Approximately 1.1MWe After Momentary Load Reduction

Section 1R17: Permanent Plant Modifications

23 Saltwater Discharge Checkvalve Replacement

ES 200300007, Rev 0, Replace Saltwater Pump Discharge Check Valves
ES 200300007, Rev 1, Replace Saltwater Pump Discharge Check Valves
MO 1200302707, Implement ES 200300007-000, Replace 1 CKVSW-103
MO 1200302709, Implement ES 200300007-000, Replace 1 CKVSW-111
MO 2200302910, Implement ES 200300007-000, Replace 2 CKVSW-111

23 AFW Pump Outboard Bearing Housing Replacement

MO 2200103181 - Replace #23 Outboard Pump Bearing Housing
Clearance Order 2200400060 - Tagout 23 AFW Pump
Drawing Number 63079SH0054B - Schematic Diagram Aux. Feedwater Motor Driven Pump 23
Drawing Number 63583 - Auxiliary Feedwater

Section 1R19: Post-Maintenance Testing

11A SRW Heat Exchanger following cleaning

OI-29 Salt Water System
NO-1-203 Attachment 1, Operations Section Performance Evaluation
Compensatory Measures Actions to Prepare for Debris Influx from Storms for Seasonal Die Off, Revision 1

11 Salt Water Header flow verification testing following cleaning

OI-29 Salt Water System
NO-1-203 Attachment 1, Operations Section Performance Evaluation
Compensatory Measures Actions to Prepare for Debris Influx from Storms for Seasonal Die Off, Revision 1
STP-O-73A-1 Salt Water Pump Operability Test

11 Component Cooling Water Heat Exchanger following cleaning

OI-29 Salt Water System
NO-1-203 Attachment 1, Operations Section Performance Evaluation
Compensatory Measures Actions to Prepare for Debris Influx from Storms for Seasonal Die Off, Revision 1

12 Salt Water Header flow verification testing following cleaning

OI-29 Salt Water System
NO-1-203 Attachment 1, Operations Section Performance Evaluation
Compensatory Measures Actions to Prepare for Debris Influx from Storms for Seasonal Die Off, Revision 1

13 Charging Pump testing following maintenance

STP-O-73D-1 Charging Pump Performance Test

23 AFW Pump testing following modification

STP-O-5A-2 Auxiliary Feedwater Quarterly Surveillance Test

Section 1R22: Surveillance Testing

Remote Shutdown and Post Accident Monitoring Instrument Channel Check

STP O-63-1 Remote Shutdown and Post Accident Monitoring Instrument Channel Check, Revision 33
OI-11 Post Accident Monitoring Instrumentation (PAMS)

EN-4-104, Surveillance Test Program

2A Emergency Diesel Generator

STP-O-8A-2, Rev 24, Test of 2A DG and 4KV Bus 21 LOCI Sequencer
MO 2200400152, STP-O-8A, 2A DG and 21 4KV LOCI Sequencer Monthly Test

11 Battery Charger

MO 0200400566, 11 Battery Charger 11 Test for Operability
STP M-551A-O, Rev 4, Battery Charger #23 and #11 Operability Test
Drawing: 61030, Rev 31, Single Line Diagram Vital 120Vac, 125Vdc, Emergency 250Vdc

11A, 11B SRW and 11 CCHX Heat Exchanger Flow Verification

MO 2200403654, During the SW Flow Verification After the Cleaning of 21B SRW HX
MO 2200403652, Clean Plenum and Strainers of 21A HX
MO 2200400740, The is a flange leak on the Saltwater Piping Downstream
MO 2200401140, Clean 22 ECCS Pump Room Air Cooler Duplex Strainer
MO 2200400784, Replace Anodes for 22 ECCS Pump Room Air Cooler
MO 2200400986, Clean 22 ECCS Pump Room Air Cooler HX Coils
MO 2200401182. Inspect 22 ECCS Pump Room Air Cooler Channel Head
OI-29-2, Saltwater
IRE-000-069, 11CCHX Would Not Pass Required Flow IAW 0I-29, 6.34
IR4-022-457, 12 CCHX is Dirty to the Extent We are Unable to Pass Required Amount of SW Flow
IRE–000-148, 21 CCHX Would not Pass Required Flow Following 21B SRW HX Cleaning

Section 1EP2: Alert and Notification System Testing

S-W-4, Siren Test Procedure for the PANS System, Rev 0
Design Report Upgraded Public Alert and Notification System (ANS), CCNPP

Section EP3: Emergency Response Organization Augmentation

EP-1-107, Emergency Response Organization Expectations and Responsibilities
3/24/04 Notification Drill Data
6/24/04 Notification Drill Data
ERPIP-904, Emergency Response Training, Rev 9

Section1 EP4: Emergency Action Level and Emergency Plan Changes

10 CFR 50.54(q) review of the new ED/RM position
10 CFR 50.54(q) review of the change to electrical EALs/ technical basis
OI-46, Seismic Measurement Equipment, Rev 8

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

Quality Performance Assessment Report of Continuous Assessment Audit 2002-02
Audit Report 03-4Q Quarterly Assessment
Barrier Analysis Report for Significant Event Report (AIT Number: 4B200300524)
October 21, 2003, Emergency Response Drill
September 9, 2003, Emergency Response Drill
September 9, 2002, Emergency Response Drill
June 15, 2004, Emergency Response Drill
June 24, 2003, Emergency Response Drill
June 24, 2004, Emergency Response Recall Drill
Self Assessment SA200400073, 2003 Drill Delta Roll-up

Issue Reports:

IR4-015-412	IR4-018-820	IR4-021-880	IR4-023-261	IR4-024-008	IR4-024-126
IR4-015-415	IR4-021-153	IR4-022-581	IR4-023-262	IR4-024-009	IR4-024-195
IR4-016-274	IR4-021-256	IR4-022-676	IR4-023-990	IR4-024-125	IR4-024-197

IR4-024-199	R4-024-299	IR4-028-126	IR4-029-253
IR4-024-210	IR4-027-130	IR4-028-127	IR4-030-404
IR4-024-222	IR4-028-125	IR4-029-157	

Section 1EP6: Drill Evaluation

Drill scenario SP-4

Section 4OA1: Performance Indicator Verification

Siren Test Data: 1/1/03 - 6/30/04
DEP Data: 1/1/03 - 6/30/04
ERO Participation Data: 1/1/03 - 6/30/04
RM-1-307, Rev. 0, "Safety System Functional Failure Performance Indicator"
RAN 01-019AFW, Rev. 3, "NRC Performance Indicator Guideline Mitigating Event Cornerstone Auxiliary Feedwater System"
RAN 01-019DG, Rev. 3, "NRC Performance Indicator Guideline Mitigating Event Cornerstone Diesel Generator System"
RAN 01-019HPSI, Rev. 2, "NRC Performance Indicator Guideline Mitigating Event Cornerstone High Pressure Safety Injection System"
RAN 01-019RHR, Rev. 1,,"NRC Performance Indicator Guideline Mitigating Event Cornerstone Residual Heat Removal System"
STP O-65-2, Rev. 39, "HPSI and LPSI PP CKV Closure Test"

Section 4OA2: Identification and Resolutions of Problems

Issue Reports

IR4-018-426	IR4-024-043	IR4-008-957	IR4-024-439	IR4-018-385	IR4-029-666
IR4-037-440	IR4-033-947	IR4-033-267	IR4-025-622	IR4-030-381	IR4-035-385
IR4-036-806	IR4-037-487	IR4-018-402	IR4-018-426	IR4-036-407	IR4-018-402
IR4-020-083	IR4-023-561	IR4-008-669	IR4-036-664	IR4-033-018	IR4-037-169
IR4-036-560	IR4-037-149	IR4-035-345	IR4-031-719	IR4-037-328	IR4-024-661

Section 4OA3: Event Followup

Reactor Trip During Scheduled Maintenance

LER 05000317/2004-001-00 - Reactor Trip During Scheduled Maintenance
NRC Special Inspection Report No. 05000317/2004008 and 05000318/2004008

Reactor Trip Due to Low Steam Generator Water Level After Feed Pump Trip

LER 05000318/2004-001-00 - Reactor Trip Due to Low Steam Generator Water Level After Feed Pump Trip
NRC Special Inspection Report No. 05000317/2004008 and 05000318/2004008

Section 4OA4: Cross Cutting Aspects of Findings

Improperly Erected Scaffold

Drawing: 61007, Rev 37, Single Line Meter 8 Relay Diagram, 11A, 11B, 14A, 14B, FSAR Figure 8-1
Memorandum from A.L. Simpson to M.J. Gahan dated March 16 2004, Subject : Resolution IR4-007-099, Based on Observation (#249) Made by NRC Inspectors During a SSDI AIT IR2004000007, Milestone 3, Scaffold Erected within 12" of 14A Loadcenter

Section 4OA5: Other Activities

Improperly Erected Scaffold

Drawing: 61007, Rev 37, Single Line Meter 8 Relay Diagram, 11A, 11B, 14A, 14B, FSAR Figure 8-1
Memorandum from A.L. Simpson to M.J. Gahan dated March 16 2004, Subject : Resolution IR4-007-099, Based on Observation (#249) Made by NRC Inspectors During a SSDI AIT IR2004000007, Milestone 3, Scaffold Erected within 12" of 14A Loadcenter

Saltwater/Service Water Heat Exchanger Fouling

IRE-000-174 - Rapid downpower due to lowering condenser vacuum in the 23 condenser shell.

IRE-000-228 - 21A and 21B SRWHX flows lowered by 400 GPM each
IRE-000-279 - While removing 22A Waterbox from service for cleaning flows on SRW HX were severely degraded
IRE-000-278 - While performing saltwater flow verification on 22 SW pump the required flow could not be obtained through 22 CCHX.
IRE-000-276 - 22 ECCS basket strainer is clogged and needs cleaning
IRE-000-259 - Seasonal variances in the bay environment have resulted in unscheduled unavailability of the service water heat exchangers
IRE-000-260 - Seasonal variances in the bay environment have resulted in loss of scheduled generation due to blockage of condenser waterboxes
AOP -7A Loss of Saltwater Cooling
Unit 1 Reactor Operators Log
Saltwater Flow verification Performance Evalution dated October 7, 2004
AOP-7G, Loss of Condenser Vacuum
EOP-2 Loss of Offsite Power/Loss of Forced Circulation
Generic Letter 89-13
Unit 2 Reactor Operators Log

LIST OF ACRONYMS

ADV	Atmospheric Dump Valve
AFAS	Auxiliary Feedwater Actuation Signal
AFW	Auxiliary Feedwater
ALARA	As Low As Is Reasonably Achievable
ANS	Alert and Notification System
AOP	Abnormal Operating Procedure
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram)
CAP	Corrective Action Program
CC	Component Cooling
CCHX	Component Cooling Water Heat Exchanger
CDF	Core Damge Frequency
CDP	Core Damae Probability
CE	Combustion Engineering
CEDE	Cumulative Effective Dose Equivalent
CEDM	Control Element Drive Mechanism
CFR	Code of Federal Regulations
CR	Condition Report
DAW	Dry Active Waste
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
ECCS	Emergency Core Cooling System
ECT	Eddy Current Testing
EP	Emergency Preparedness
ERO	Emergency Response Organization
ERPIP	Emergency Response Plan Implementation Procedures
HP	Health Physics
HRA	High Radiation Area
HX	Heat Exchanger
ICI	In-Core Instrumentation
IMC	Inspection Manual Chapter
IR	Issue Report
ISI	In-Service Inspection
LCO	Limited Condition of Operation
LER	Licensee Event Report
LHRA	Locked High Radiation Are
LPSI	Low Presure Safety Injection
MC	Manual Chapter
MT	Magnetic Particle
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
OAP	Operations Administrative Policy
PI	Performance Indicator
PNS	Public Notification System

PZR	Pressurizer
RCA	Radiologically Controlled Area
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RFO	Refueling Outage
RHP	Reactor Head Penetration
RPS	Reactor Protection System
RSPS	Risk Significant Planning Standard
RPV	Reactor Pressure Vessel
SCBA	Self-Contained-Breathing Apparatus
SDC	Shutdown Cooling
SDP	Significance Determination Process
SGIS	Steam Generator Isolation Signal
SIAS	Safety Injection Actuation Signal
SRW	Service Water
SRWHX	Service Water Heat Exchanger
SSC	Systems, Structures, and Components
SSDI	Safety System Design Inspection
SSE	Safe Shuntdown Earthquake
STP	Surveillance Test Procedure
SWP	Special Work Permit
TBV	Turbine Bypass Valve
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Examination
VARS	Volt-amperes-reactive
VHP	Vessel Head Penetration
VHRA	Very High Radiation Area
VT	Visual Examination