October 30, 2000

Mr. Charles H. Cruse
Vice President
Calvert Cliffs Nuclear Power Plant, Inc.
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: NRC's CALVERT CLIFFS INSPECTION REPORT 05000317/2000-008, 05000318/2000-008

Dear Mr. Cruse:

On September 30, 2000, the NRC completed an inspection at your Calvert Cliffs Nuclear Power Plant Units 1 & 2. The enclosed report presents the results of this inspection. Preliminary results were discussed with Mr. Katz and other members of your staff on October 23, 2000.

The inspection was an examination of 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. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, the inspection covered routine resident inspections, as well as, region based inspection in the areas of physical protection, permanent plant modifications, safety evaluations and maintenance effectiveness assessment. There were no findings identified.

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Sincerely,

/RA/

William A. Cook, Chief
Projects Branch 1
Division of Reactor Projects

Docket Nos.: 05000317 and 05000318
License Nos.: DPR-53 and DPR-69

Enclosure: Inspection Report 05000317/2000-008
and 05000318/2000-008

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REGION I

Charles H. Cruse

Docket Nos.:	05000317 05000318
License Nos.:	DPR-53 DPR-69
Report No:	05000317/2000-008; 05000318/2000-008
Licensee:	Calvert Cliffs Nuclear Power Plant, Inc.
Facility:	Calvert Cliffs Nuclear Power Plant Units 1 and 2
Location:	1650 Calvert Cliffs Parkway Lusby, MD 20657-4702
Dates:	August 13, 2000 to September 23, 2000
Inspectors:	D. Beaulieu, Senior Resident Inspector F. Bower, Resident Inspector T. Hoeg, Resident Inspector M. Modes, Sr. Reactor Inspector K. Young, Reactor Inspector K. Kolacyzk, Reactor Inspector E. Lawrence, Reactor Inspector (Trainee) L. Cline, Reactor Inspector (Trainee) M. Gray, Reactor Engineer G. Smith, Sr. Physical Security Inspector P. Frechette, Physical Security Inspector
Approved by:	William A. Cook, Chief Reactor Projects Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000317/2000-008, 05000318/2000-008, on 08/13-09/23/2000, Calvert Cliffs Nuclear Power Plant, Inc., Calvert Cliffs Nuclear Plant, Units 1 & 2.

The inspection was conducted by resident inspectors, regional security specialist inspectors, and regional engineering and maintenance rule inspectors per the NRC's Reactor Oversight Process (Attachment 1). The significance of findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

No significant findings were identified during this inspection.

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ATTACHMENT

Report Details

Both units operated at or near 100 percent power for the entire inspection period except for minor power reductions to support main turbine valve testing and a Unit 1 reactor trip on September 10, 2000. Unit 1 was restarted on September 12, 2000.

1. REACTOR SAFETY

Cornerstones: Initiating Event, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors verified that systems, structures, and components associated with the intake structure would remain functional when challenged by hurricane or tropical storm conditions. The inspectors reviewed the Updated Final Safety Analysis Report, Individual Plant Examination of External Events, Emergency Response Plan Implementing Procedure 3.0, Attachment 20, "Severe Weather", Technical Specifications, and Operations Administrative Policy (OAP) 00-01, "Severe Weather Operations." Additionally, the inspectors walked down selected areas in and around the intake structure to verify that the licensee properly implemented OAP 00-01.

b. Issues and Findings

No findings of significance were identified.

1R02 Changes to License Conditions

.1 Safety Evaluations

a. Inspection Scope

The inspectors examined changes to the facility and procedures as described in the Updated Final Safety Analysis Report to ensure these changes were reviewed and documented by the licensee in accordance with 10 CFR 50.59. The SEs were selected from the changes performed during the last two years, taking into consideration the safety significance of the change, risk to the structures, systems, and components affected, and impact on the three reactor safety cornerstones. The inspectors also reviewed the identification and resolution of problems related to SEs and the associated changes. The inspectors reviewed the following safety evaluations (SEs):

- SE 00271 Replacement of Analog Main Feedwater Regulating Valve Positioners With Digital Instrumentation
- SE 00285 Repair of Leaking Pressurizer Heater B-1
- SE 00295 Unit 1 Cycle 14 Revision to Fxy and Fr Limits
- SE 00302 Replacement of GE Magna-Blast Breakers With ABB Vacuum Breakers
- SE 00315 Change in Normal Position of 2MOV645

- SE 00352 Evaluate the Consequences of Leaving an Eddy Current Probe in the 22 Steam Generator
- SE 00360 Evaluate Performing a Safety Injection System Piping Flush While in Modes 1,2 or 3
- SE 00374 Removal of Isolation Signals to Valves 2-CV-5160, 2-CV-5206, 2-CV-5163, 2-CV-5208, and 2-CV-5162
- SE 00405 Evaluate Bypassing RTD 1TE112HA for Channel A of the Reactor Protection System

b. Issues and Findings

No findings of significance were identified.

.2 Safety Evaluation Screens

a. Inspection Scope

The inspector reviewed a sampling of changes, tests, and experiments for which the licensee determined that a safety evaluation was not required. The review verified that the licensee's threshold for performing safety evaluations was consistent with 10 CFR 50.59.

- ES199900120 Installation of Quick Disconnect Latches on Sample Hoods in the Auxiliary Building
- ES199900342 Evaluation of Degraded Nuclear Instrumentation Detector Well Covers
- ES199900653-002 Replacement of Instrumentation Associated With the Unit 2 Service Water Heat Exchangers and Strainers
- ES199900711 Replacement of Actuators on MOVs 6900 and 6901
- ES199900939 Removal of Pressure Tap Points for Moisture Separator Reheaters
- ES200000036 Close Drain Openings in the Auxiliary Building Heating and Ventilation System Components
- ES200000394 Reclassification of RCP Seal Leak-off Lines From Class 1 to Non-Class
- ES200000504 Lube Oil Pump Setpoint Change
- ES200000661 Rescale Instrumentation Loop for Waste Gas System Flow
- OI-3B-1&2, Rev 14 Procedure Change to Shutdown Cooling System.
- EOP-1, Rev 8 Emergency Operating Procedure Change
- TMOD 1-00-004 Defeat Hanging Alarms Due to Handswitch for 2-MOV 635 in Pull-to-Lock
- TMOD 1-00-0046 Installation of Thermocouples and Associated Wiring on ERV-402, ERV-404, RV-200, and RV-201
- TMOD 1-00-0056 Clear the 11A Reactor Coolant Pump Seal Temp High Pressure Alarm on 1C06 by Jumpering 1 PIA 153MD H227

b. Issues and Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted an equipment alignment partial walkdown to evaluate the operability of a selected redundant train or backup system, while the affected train or system was inoperable or out of service. The walkdown included a review of system operating instructions to determine correct system lineup and verification of critical components to identify any discrepancies which could affect operability of the redundant train or backup system. The inspectors conducted the equipment alignment partial walkdown on the Unit 1 high pressure safety injection system.

b. Issues and Findings

No findings of significance were identified.

1R05 Fire Protection - Fire Area Tours

a. Inspection Scope

The inspectors conducted tours of areas important to reactor safety to evaluate, as appropriate, conditions related to: (1) licensee control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; and (3) the fire barriers used to prevent fire damage or fire propagation. The inspectors used administrative procedure SA-1-100, Fire Prevention, during the conduct of this inspection.

The areas inspected included:

- 1B Emergency Diesel Generator Room
- 2A Emergency Diesel Generator Room
- 2B Emergency Diesel Generator Room
- 21 Fuel Oil Storage Facility

b. Issues and Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed documentation and conducted walkdowns of risk significant areas of the intake structure for both units to verify that flood mitigation plans and equipment were consistent with the design requirements and the risk analysis assumptions. Documents reviewed included Updated Final Safety Analysis Report (UFSAR) Sections 5.6.2, "Intake Structures," and 2.8.3, "Hurricane Tidal Effects," the Individual Plant Examination and the Individual Plant Examination for External Events. The inspectors examined the intake structure flood prevention attributes including water tight doors, penetration sealing, drain and sump configurations, and the level alarm circuits.

b. Issues and Findings

No findings of significance were identified

1R12 Maintenance Rule Implementation

.1 10 CFR 50.65 (a)(3) Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's evaluation, "A(3) Periodic Assessment of Maintenance Rule Program, Calvert Cliffs Nuclear Power Plant," for the period October 1996 through September 1998. At the time of the inspection, the licensee was finishing an assessment report for the period October 1998 through September 2000. The inspectors noted that, as part of the soon to be completed assessment, the system managers performed evaluations of systems which changed status within the Maintenance Rule Program. The inspectors selected some of these completed system evaluations as part of their overall review.

b. Issues and Findings

No findings of significance were identified.

.2 10 CFR50.65 (a)(1) and (a)(2) Systems Reviews

a. Inspection Scope

The inspectors selected the below listed (a)(1) status safety systems to verify that: (1) goals and performance criteria were appropriate; (2) industry operating experience was considered; (3) corrective action plans were effective; and (4) performance was being effectively monitored. The inspectors also reviewed the licensee's assessment of the balance between reliability and availability for these systems.

- Unit 1 Main Feedwater Steam Generator Level Control
- Unit 1 11 Salt Water Pump

- Unit 1 Switchgear Heating, Ventilation, and Air Conditioning System
- Unit 1 and 2 Salt Water Piping
- Unit 1 and 2 Instrument Air Check Valves
- Unit 2 Auxiliary Feedwater cross tie to Unit 1
- Unit 2 22 Auxiliary Feedwater Pump
- Unit 2 22 Auxiliary Feedwater Flow Train

The inspectors reviewed the following safety systems in (a)(2) status to evaluate system performance with respect to the licensee's established performance criteria:

- Unit 1 Auxiliary Feedwater System
- Unit 1 120 VAC System
- Unit 1 Control Room Heating, Ventilation, and Air Conditioning System
- Unit 2 Emergency Diesel Generating System
- Unit 2 Component Cooling Water System
- Unit 2 Fire Protection System

The following documents were used as references during this review:

- List of a(1) structures, systems, and components, dated August 2000, Calvert Cliff Nuclear Power Plant.
- Administrative Procedure, MN-1-112, "Managing System Performance", revision 5, July 24, 2000.
- Calvert Cliffs Maintenance Rule Scoping Document, working revision 15, dated August 29, 2000.
- Calvert Cliffs Plant Level Performance Indicators, July 2000, dated August 4, 2000.
- Calvert Cliffs Maintenance Rule System Level Performance Indicators, Summary Report, Second Quarter 2000, dated July 24, 2000.
- Calvert Cliffs System Unavailability Hours Summary Report for July 2000, dated August 7, 2000.
- Calvert Cliffs Maintenance Rule Expert Panel Meeting Minutes, dated August 24, 2000.

b. Issues and Findings

No findings of significance were identified.

.3 Unit 1 Saltwater System and Control Room Heating Ventilation and Air Conditioning

a. Inspection Scope

The inspectors reviewed performance-based problems involving selected in-scope structures, systems, or components (SSCs) to assess the effectiveness of the maintenance program. Reviews focused on: (1) proper maintenance rule scoping, in accordance with 10 CFR 50.65; (2) characterization of failed SSCs; (3) safety significance classifications; (4) 10 CFR 50.65 (a)(1) and (a)(2) classifications; and, (5) the appropriateness of performance criteria for SSCs classified as (a)(2), and goals and corrective actions for SSCs classified as (a)(1). The inspectors reviewed the most

recent system health reports and the list of functional failures for the last two years. The following SSCs were reviewed:

- Unit 1 Saltwater Cooling
- Unit 1 and 2 Control Room Heating Ventilation and Air Conditioning

b. Issues and Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

For the selected SSC maintenance orders listed below, the inspectors verified: (1) risk assessments were performed in accordance with procedure NO-1-117, "Integrated Risk Management;" (2) the risk of scheduled work was managed through the use of compensatory actions; and, (3) that applicable contingency plans were properly identified in the integrated work schedule.

- MO199903934 12A Service Water Heat Exchanger
- MO2200002143 ECCS Pump Room Cooler Saltwater Outlet Control Valve 2CV5174 - 22
- MO2200002935 21 Switchgear HVAC Damper Piston Operator Replacement
- MO1200002169 Inspect and Lubricate 1MOV514OP

b. Issues and Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions and Events

a. Inspection Scope

As described in Licensee Event Report 50-317/2000-005, on September 10, 2000, Unit 1 tripped from 100 percent power due to a spurious signal from channel A of the engineered safety features actuation system (ESFAS) steam generator isolation signal (SGIS) that closed the main steam isolation valves (MSIVs). The MSIVs closing created shrink in both steam generators and the reactor tripped on low steam generator water level. Operators responded appropriately and the plant was brought to a safe shutdown condition.

The suspect channel A SGIS logic module was replaced and the new module was post-maintenance tested satisfactorily prior to restarting the unit on September 12, 2000. The suspect logic module was sent to the vendor for testing. Although a review of plant history found no cases of similar ESFAS failures, the licensee plans to evaluate the vendor's test results and assess other ESFAS modules.

Inspector follow-up determined that after the trip, No. 11 Moisture Separator/Reheater second-stage steam source isolation valve (1-MS-4025) did not close. Plant operators reset the circuit breaker supplying power to the motor-operator for the valve, and closed 1-MS-4025, within minutes of identifying the valve open. Post-trip troubleshooting found degraded insulation of a wire in the motor-operator of 1-MS-4025. The licensee attributed this chafed insulation to steam flow induced vibration. The failure of 1-MS-4025 to close could cause an excessive reactor plant cooldown, without control room operator intervention. The inspector noted that the Unit 1 performance indicator for Scrams with a Loss of Normal Heat Removal (LONHR) was already WHITE as a result of previous LONHR events.

b. Issues and Findings

No significant findings were identified. An NRC supplemental inspection of the Unit 1 WHITE performance indicator for scrams with a LONHR is documented in NRC Inspection Report 50-317/2000-010. Recurrent problems with valve 1-MOV-4025 were also discussed in that report.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems to assess: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were appropriately addressed with respect to their collective impact on continued safe plant operation; and, (4) where compensatory measures were involved, whether the measures were in place, would work as intended, and were appropriately controlled. The following evaluations were reviewed:

- Operability Determination 2000-001 Safety Injection to 22B Low Pressure Safety Injection Loop
- Operability Determination 2000-003 AFW Flow Control Valve, 1CV4512
- Operability Determination 2000-004 22 ECCS Pump Room Cooler Outlet Flow Control Valve, 2CV5174

b. Issues and Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors evaluated the operator workaround listed below 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 adversely impacted; (2) the effect on the operator's ability to implement abnormal or emergency procedures; and, (3) if operator workaround problems were captured in the licensee's corrective action program.

- Issue Report 3-030-768, 11A Reactor Coolant Pump Seal Lower Pressure Transmitter Failure

b. Issues and Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

.1 Biennial Review

a. Inspection Scope

The inspectors reviewed the below listed permanent plant modifications that were either completed during the last two years or were scheduled to be installed during the 2001 refueling outage for Unit 2. The sample selection was based on the risk significance of the system being modified and the impact of the modification on the reactor safety cornerstones of initiating events, mitigating systems, and barrier integrity. The modifications included component replacements, equivalency evaluations, and minor and major modifications to risk significant systems. The inspectors evaluated the modification's affect on system availability, reliability, and functional capability by reviewing the affected parameters associated with the modification. The inspectors also reviewed post modification testing for system interactions and structure, system, and component performance. The inspectors reviewed licensing and design basis documents to ascertain if they were updated in accordance with the modification. The inspectors also conducted interviews with design engineers, system engineers, system managers, project managers, and licensing personnel familiar with the modification.

- ES199501242 — 13kV Transformer Time Delay Relay Addition
- ES199900267-000 — Replace Intercept Valve Half Stroke Switch in Unit 1 Main Turbine
- ES199900556 — Remove 2-FO-8701 on 21 SGFPT and 2-FO-8072 on 22 SGFPT
- ES199800338 — Mechanical Nozzle Seal Assemblies (MNSA) for Repair of Alloy 600 Instrument Nozzles on the Reactor Coolant System Pressurizer.
- FCR 90-0079 — Replacement of Component Cooling Water Discharge Check Valves

• ES199800350-014	Unit 2 Cycle 13 Worst Stuck CEA Evaluation
• ES199900379	Removal of Portions of Pipe Support 12" CC-2-2009-R9 that Interfere with Reactor Coolant Pump 21B Motor Removal
• ES199801112, Rev. 0	Modify Connectors on Reactor Protection System (RPS) Trip Units.
• ES199801112, Rev. 1	Remove Material from the RPS Trip Unit Circuit Cards.
• ES199700702	Remove the Flow Dependent Selector Switch in the Unit 1 and Unit 2 RPS.
• ES199701972	Rewire the 4kV Third Train Pump Charging Motor Alarm Circuit.
• ES199900386	Replace the 500kV Panalarm Annunciator System with Modicon Programmable Logic Controller System.
• ES199800575	Repair Spacer that is Tack Welded to the Shutter on the 4kV Switchgear on Breaker 152-1403.
• ES199900710	Re-connect the Unit 2 Electro-hydraulic Control Backup Power Source from the Unit 2 Main Generator Permanent Magnet Generator to a Vital Alternating Current Power Source.
• ES200000223	Replace Fischer and Porter Transmitters with Rosemont transmitters for Steam Generator Feedwater Pump Flow Indication.
• ES199700526	Add Cover Guards over “DC Filter Charge” Switch on Vital Inverters
• ES200000369	Evaluate Potential Affect of Loose Part in Steam Generator 12
• ES199901012	Replace Containment Spray Check Valves 2CKVSI-330 and 2CKVSI-340
• ES199800809	Modify Seismic Restraints on Valves 1(2)MOV269 and 1(2)MOV399
• ES199801314	Change the Unit 1 Main Turbine Low Lube Oil Pressure and Thrust Bearing Wear Turbine Trip to a 2 out of 2 Logic.
• ES199800956	Replace Fisher Model 546 I/Ps with Rosemont 3311s on the Atmospheric Dump Valves for Units 1 and 2.
• ES199800682	Evaluation of Installation of Framatome Stabilizer in 12 Steam Generator Tube 140/84.

In addition, the inspector reviewed the licensee’s re-evaluation of CE Alloy 800 Sleeves installed in the 11 and 12 steam generators due to a change in the minimum yield strength specified in Topical Report CEN-633-P. This constituted a change to a permanent modification of the steam generators.

b. Issues and Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance test procedures and associated testing activities for selected risk significant mitigating systems to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness, consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy for the application; (5) tests were performed, as written, with applicable prerequisites satisfied; and (6) that equipment was returned to the status required to perform its safety function. The inspectors also verified that an issue report (IR3-029-676) was initiated and entered into the corrective action system for minor discrepancies related to the risk assessment of maintenance orders requiring post maintenance testing.

- 21 Control Element Drive System Motor Generator Set (MO2200000408 and MO2199903835)
- Valve 1MOV514 Inspect and Lubricate (MO1200002169)
- Steam Generator Isolation Signal “A” Actuation Module (MO1200003859)

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing

.1 Unit 1 High Pressure Safety Injection

a. Inspection Scope

The inspectors observed selected portions of the Technical Specification (TS) 3.5.2.3 quarterly surveillance testing conducted to demonstrate that the high pressure safety injection (HPSI) pumps met the total developed head requirements. The test also demonstrated that the inservice testing requirements of TS 5.5.8 were met for: the HPSI pumps; the full-stroke opening of HPSI minimum flow return check valves 1-SI-422, 1-SI-424, and 1-SI-426; and the partial stroke testing of the refueling water storage tank outlet check valves 1-4146 and 1-4147. The results of surveillance test procedure (STP) O-73I-1, HPSI Pump and Check Valve Quarterly Operability Test, were reviewed. The Technical Specifications and the Updated Final Safety Analysis Report were used as references. The inspector also reviewed issue reports initiated to enter minor discrepancies into the corrective action program for resolution.

b. Issues and Findings

No findings of significance were identified.

.2 Unit 1 Low Pressure Safety Injection

a. Inspection Scope

The inspectors observed selected portions of TS 3.5.2.3 quarterly surveillance testing conducted to demonstrate that the low pressure safety injection (LPSI) pumps met the total developed head requirements. The test also demonstrated that the inservice testing requirements of TS 5.5.8 were met for the LPSI pumps and the full-stroke opening of LPSI minimum flow return check valves 1-SI-448 and 1-SI-451. The results of procedure STP O-73J-1, LPSI Pump Operability Test, were reviewed. The Technical Specifications and the Updated Final Safety Analysis Report were used as references.

b. Issues and Findings

No findings of significance were identified.

.3 Unit 1 Containment Spray

a. Inspection Scope

The inspectors observed selected portions of TS 3.6.6.4 quarterly surveillance testing conducted to demonstrate that the containment spray (CS) pumps met the total developed head requirements. The test also demonstrated that the inservice testing requirements of TS 5.5.8 were met for the CS pumps and the full-stroke opening of CS minimum flow return check valves 1-SI-334 and 1-SI-344. The results of procedure STP O-73K-1, Containment Spray Pump Operability Test, were reviewed. The Technical Specifications and the Updated Final Safety Analysis Report were used as references.

b. Issues and Findings

No findings of significance were identified.

.4 Units 1 and 2 Safety Injection Tank Boron Concentration Verification

a. Inspection Scope

The inspector evaluated whether procedure STP O-107-1, Safety Injection Tank Boron Concentration, adequately satisfies Technical Specification Surveillance Requirement 3.5.1.4 which requires that safety injection tank (SIT) boron concentration be verified every 31 days.

b. Issues and Findings

Prior to this inspection period, the licensee had verified SIT boron concentration through monthly sampling and analysis. On August 28, 2000, procedure STP O-107-1 was revised to allow SIT boron concentration to be verified by either sampling or in-leakage monitoring. Pending further NRC staff review to ensure that TS surveillance 3.5.1.4 is appropriately satisfied via Calvert Cliffs' alternative in-leakage monitoring method, this item is unresolved. **(Unresolved Item 05000317 and 05000318/200008-01)**

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed a risk significant temporary modification to assess: (1) the adequacy of the 10 CFR 50.59 evaluation; (2) that the installations were consistent with the modification documentation; (3) that drawings and procedures were updated as applicable; and, (4) the adequacy of the post installation testing. The following temporary alteration was inspected:

- 2-99-0043 Removal of Safety Injection Actuation System/Recirculation Actuation Signal to the Closed Cooling Heat Exchanger Salt Water Valves

b. Issues and Findings

No findings of significance were identified.

1EP1 Drills Exercises and Actual Events

a. Inspection Scope

The inspectors observed simulator activities during an emergency planning drill conducted on August 18, 2000. The inspectors verified that emergency classification declarations and notification activities were properly completed. The inspectors reviewed the drill report and verified that issue reports were initiated and entered into the corrective action system for the identified deficiencies. The inspectors also verified that a minor inspector identified issue was addressed in the drill report.

b. Issues and Findings

No findings of significance were identified.

3. Safeguards

Cornerstone: Physical Protection

3PP1 Response to Contingency Events

a. Inspection Scope

The following activities were conducted to determine the effectiveness of the licensee's Response to Contingency Events:

On September 12, 2000, performance testing of the intrusion detection system was conducted. The inspectors toured the entire perimeter to select areas of potential vulnerability in the intrusion detection system and selected three specific locations for testing. The inspector observed the licensee perform crawl and simulated jump and run testing at all locations. A second inspector was positioned in the alarm station during the tests to observe audible and visual alarm annunciation.

Firearms proficiency was observed on September 13, 2000. Courses of fire for both nighttime familiarization and stress firing were observed for three security force members. A selected review of five firearms qualification training records was performed.

The licensee's defensive strategy, response time lines, target sets contingency drill scenarios, and relevant implementing procedures were reviewed. Upon completion of this review, four table top drills were conducted with a security shift supervisor and a response team leader. The inspectors developed the scenarios, including the adversary entry point and target selection, for each table top drill.

A review of documentation associated with the licensee's drill and exercise program was conducted. This review included the documentation and critiques for over seventy contingency response drills.

b. Issues and Findings

No findings of significance were identified.

4 OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed Calvert Cliff's performance indicator (PI) data for the below listed cornerstones to verify individual PI accuracy and completeness. This inspection examined data and plant records from 1999 through the second quarter of 2000, including review of PI Data Summary Reports, Licensee Event Reports, operator narrative logs, and maintenance rule records.

a. Emergency AC Power System Unavailability
b. High Pressure Safety Injection System Unavailability
c. Heat Removal System Unavailability

d. Residual Heat Removal System Unavailability
e. Safety System Functional Failures

b. Issues and Findings

No findings of significance were identified.

4OA5 Performance Indicator Data Collecting and Reporting Process Review

a. Inspection Scope

Using Temporary Instruction (TI) 2515/144, the inspectors reviewed the licensee's performance indicator process to determine if they were appropriately implementing the guidance specified in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline." The inspector reviewed the licensee's data collection and reporting procedures, PI definitions, and calculation methods for the following PIs:

- Unplanned Power Changes
- Emergency AC Power System Unavailability
- High Pressure Safety Injection System Unavailability
- Heat Removal System Unavailability
- Residual Heat Removal System Unavailability
- Safety System Functional Failures

The inspector reviewed the following records related to performance indicator data collection and submittal: PI Data Summary Reports, System Monthly Unavailability Reports, NUCLEIS Equipment History Database, Performance Indicator Guidelines (RE 00-058, dated 9/27/00), NRC Responses to Frequently Asked Questions, Issue Reports, Operator Narrative Logs, and Maintenance Rule records.

The inspector noted that the licensee identified and appropriately entered into their corrective action system two issues that could affect that accuracy of the PI data. Issue Report 3-052-259 identified that the administrative procedure for control room logs does not require operators to log when mitigating systems are inoperable for certain specified surveillances. Issue Report 3-019-473 identified that when determining emergency AC power system unavailability, they may have inappropriately credited the non-safety related station blackout diesel as an installed spare. The licensee's preliminary evaluation of these two discrepancies is that they will have only a minor impact on the performance indicator results and would not result in a color change.

b. Issues and Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the problem identification and resolution (PI&R) program as it applied to plant modifications and safety evaluations in order to verify that licensee personnel identified modification and safety evaluation issues at the appropriate threshold and entered them into their corrective action program for appropriate resolution. The inspectors also reviewed the licensee's common cause trending conducted in accordance with the Self-Assessment Program. The following corrective action Issue Reports (IRs) were reviewed:

IR3-010-970	A portion of the saltwater chemical addition system was mis-positioned during installation.
IR3-025-919	Strainer basket guide ring was not installed on the Unit 1 saltwater cooling system basket strainers.
IR3-016-471	Questions raised regarding the impact of nitrogen ingress into the reactor coolant system.
IR3-025-854	Unit 1 boric acid heat trace ammeters are inoperable.
IR3-007-835	High spot identified on reactor coolant pump shaft during replacement.
IR3-028-527	Motor control center CC 52-11407 breaker incorrectly tested by vendor. Wrong Pass/Fail criteria was used.
IR3-022-433	Initial hole in valve 2-MOV-651 for pressure locking and thermal binding concerns for Generic Letter 95-07 was bored off center.
IR3-014-631	Problems with valve 2-MOV-652 pertaining to drilling.
IR3-023-021	Installation problems associated with 21B reactor coolant pump.
IR3-027-695	Inadequate Equivalency Evaluation performed on replacement parts.
IR3-017-459	Concerns regarding auxiliary feedwater system actual temperatures.
IR3-023-050	Failure to perform required design specification testing for package ES199501715.
IR3-024-650	Pre-installation testing problems with the refueling machine identified.
IR3047-543	Diesel oil interceptor oil lift pump was submersed in water which is detrimental to the pump.
IR3-029-812	Operators did not receive adequate training on the new voltage regulator modification.

b. Issues and Findings

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) Licensee Event Report 50-317/2000-005-00: Reactor Trip due to Spurious Closure of Main Steam Isolation Valves

The NRC inspection of this licensee event report is discussed in Section 1R14 of this report. This LER is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Katz and other plant mangers at the conclusion of the inspection on October 23, 2000. The licensee acknowledged the findings presented.

.2 Proprietary Information

The inspectors informed the licensee that the inspectors reviewed proprietary documents related to the implementation of the mechanical nozzle seal assemblies and the installation/usage of Framatome Stabilizers in steam generator tubes during the course of the inspection. The proprietary documents were returned to the licensee and no information contained in this inspection report is proprietary in nature. The licensee acknowledged the use of the proprietary information.

PARTIAL LIST OF INDIVIDUALS CONTACTED

Calvert Cliffs

C. Cruse, Vice President
P. Katz, Plant General Manager
T. Pritchett, Manager, Nuclear Engineering
D. Holm, Superintendent, Nuclear Operations
K. Mills, General Supervisor, Plant Operations
L. Wechbaugh, Superintendent, Technical Support
M. Navin, Superintendent, Technical Support
T. Sydnor, General Supervisor, Plant Engineering
B. Montgomery, Director, Nuclear Regulatory Matters
W. Paulhardt, Radiation Protection Supervisor
S. Sanders, General Supervisor-Radiation Safety
L. Smialek, Radiation Protection Manager
R. Wyvill, ALARA Supervisor

ITEMS OPENED AND CLOSED

Opened

05000317&318/2000-008-01	URI	Safety Injection Tank Boron Verification

Closed

05000317/2000-005	LER	Reactor Trip Due to Spurious Main Steam Isolation Valves Closing

LIST OF ACRONYMS USED

AC or ac	Alternating Current
ABB	Asea Brown Boveri
CCNPPI	Calvert Cliffs Nuclear Power Plant, Inc.
CE	Combustion Engineering
CEA	Control Element Assembly
CFR	Code of Federal Regulations
CS	Containment Spray
DC or dc	Direct Current
EHC	Electro Hydraulic Control
ESFAS	Engineered Safety Feature Actuation System
ERPIP	Emergency Response Plan Implementing Procedure
GE	General Electric
HPSI	High Pressure Safety Injection
I/Ps	Current to Pneumatic Pressure Transducer
IRs	Issue Reports
IR	Inspection Report
kV	kilovolt
LER	Licensee Event Report

LONHR	Loss of Normal Heat Removal
LPSI	Low Pressure Safety Injection
MNSA	Mechanical Nozzle Seal Assembly
MO	Maintenance Order
MOV	Motor-Operated Valve
MSIV	Main Steam Isolation Valve
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OAP	Operations Administrative Policy
PARS	Publicly Available Records
PI	Performance Indicator
PI&R	Problem Identification and Resolution
P&IDs	Piping and Instrumentation Diagrams
PMG	Permanent Magnet Generator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RTD	Resistance Temperature Detector
SDP	Significance Determination Process
SE	Safety Evaluation
SGFP	Steam Generator Feed Pump
SGIS	Steam Generator Isolation Signal
SIT	Safety Injection Tank
SSCs	Structures, Systems, and Components
STP	Surveillance Test Procedure
SW	Saltwater
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
V	Voltage

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent little effect on safety. WHITE findings indicate issues with some increased importance to safety, which may require additional NRC inspections. YELLOW findings are more serious issues with an even higher potential to effect safety and would require the NRC to take additional actions. RED findings represent an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.